



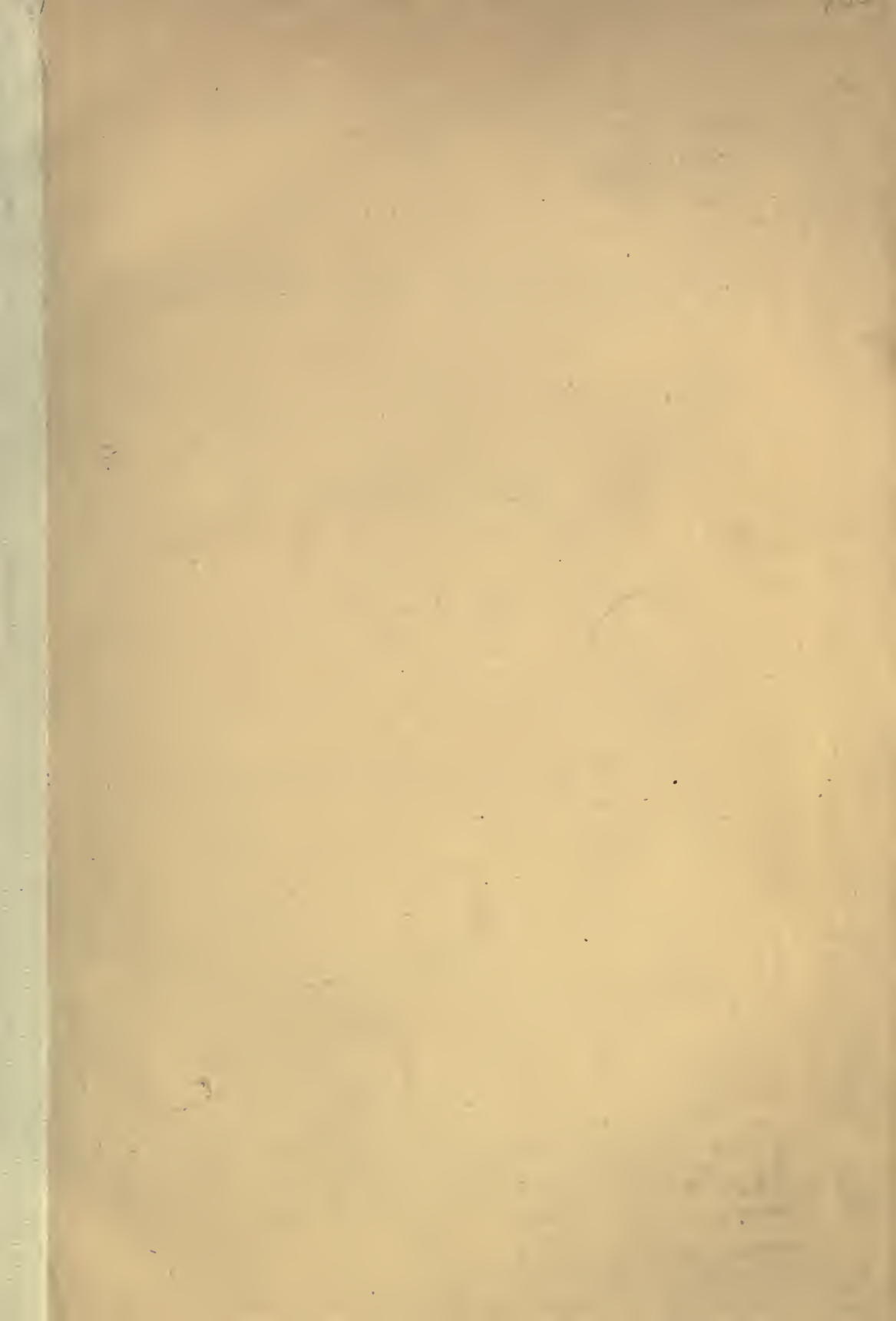
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AMERICAN RAILWAYS  
AS  
INVESTMENTS.



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CRACROFT'S INVESTMENT TRACTS.

# AMERICAN RAILWAYS

AS

## INVESTMENTS.

BY

(SIR) ROBERT GIFFEN.

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*SECOND EDITION.*

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EDWARD STANFORD, CHARING CROSS,  
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## PREFACE.

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THE English Public may almost be divided, so far as a knowledge of American United States Railways is concerned, into two very unequal sections ; one, the select and almost infinitesimal circle of a few among the greater capitalists, who are minutely and critically familiar with some particular lines in which they happen to be interested ; the other, comprising for all practical purposes the bulk of the nation, whose knowledge of the subject is summed up in two parrot cries—"Erie," "Atlantic and Great Western," and whose verdict, whenever their opinion is asked, may always be expected to be in the stereotyped formula—"Unfavourable."

Of late years, it is true, the Shares of a third line have gradually crept into the notice of a certain class of investors. But that class is in this country small, and chiefly of German attachments. I refer, of course, to the Illinois Central Shares, in which Mr. Cobden's fortunes suffered so ill-starred a check. Consistent beyond most men in his political convictions, Mr. Cobden seems to have been less tenacious, it would appear, in his private financial arrangements. For, having ventured into one of the most promising undertakings of modern times, he was induced to part, at a ruinous

sacrifice, with Shares now—that is to say, only a few years later—representing a very large fortune.

Strange to say, Mr. Cobden's action, instead of being referred to as an instance of mistaken prudence and a fatal timidity in respect of certain American Railway Shares, is still actually quoted as a warning and example against the insecurity of all American Railway Bonds.

Upon the prospects of the Shares of the Illinois Central Railway, opinion is now so far divided, that the questions are discussed, whether the present very high rate of profit will increase, remain stationary, or partially dwindle for a time. The BONDS are not, and are not to be, called in question. But, on the whole, it is only fair to acknowledge that even after its triumphant exit from the financial cloud left upon that Railway by Mr. Cobden's experience, the Illinois Central, though in high favour with a few faithful friends, is still viewed in this country with a neutral, if not unfriendly, scepticism by the general investor.

Beyond, then, the Illinois Central, Erie, and Atlantic and Great Western, the English Public have, as a Public, even in any limited sense, no familiarity with, no interest in, the railways of the United States of America. Nevertheless, these three railways represent scarcely the twenty-fifth part of the total railway interest of those States. The United States possess at this moment little short of SIXTY THOUSAND miles of railway, to our sixteen, and of those sixty thousand, the Atlantic and Great Western, Erie, and Illinois Central cover scarcely four per cent. We in this country, therefore, are practically ignorant still of the financial conditions of more than ninety per cent. of the Railways

of the United States, upon which we are ever ready, at a moment's notice, to shake our financial heads.

The discrepancy between the magnitude of such interests, and so much unconscious ignorance on the part of a shrewd and enquiring people, curious especially in matters of finance, and in none so much as railway finance, is the apology for the following Tract.

As to the contents, and their origin, one word.

In the course of professional pursuits, during which I heard the changes rung from day to day, on the three names, "Erie," "Atlantic and Great Western," "Illinois Central," stupidity itself could hardly be proof against the dawning conviction that outside that talismanic region there might be yet another region, possibly a vast outlying region, of railway fact in America, about which we, in this country, know absolutely nothing.

I communicated this sense of ignorance to my friend, Mr. Giffen, and proposed to him that we should collect the materials readily available here and in America, that I should suggest, from a professional point of view, the leading questions to which, so far as my experience went, an answer would be more generally desirable; that he should analyse the materials collected in this, and other collateral aspects, as they occurred to him, and, after due examination, state the results of his analysis without favour or partiality, as they arose. To this he consented.

The United States, at the present rate of their development, will be positively compelled to build another hundred thousand miles or more of railway within the next ten years. With this gigantic probability before us, and looking to the past,—the main question I have proposed for investigation is the following:—



*“What is the relative security, what are the relative returns, to the investor in American United States Railway BONDS, as compared with the security and the returns of the ordinary run of investments familiar to English investors?”* Ancillary to this is the more general question:—*“What are the leading features of the United States Railway System, considered as a whole, and compared with the whole of the English Railway System, financially?”*

The answer is contained in the following pages, now presented to the judgment of the Public. My share in the work, it will be understood, consists in the suggestion of the enquiry, and in the collection of the materials.

The work is, in all respects, Mr. Giffen's.

I must not forget to add, in his name and mine, our acknowledgments to Mr. Poor's Manual, a splendid monument of private enterprise, and our heart-felt thanks for the kindness of numerous American friends in the discussion and elucidation of a vast variety of detail, for which native American knowledge was of the utmost importance, not to say absolutely indispensable.

BERNARD CRACROFT.

AMERICAN RAILWAYS

AS

INVESTMENTS.



## I.

### INTRODUCTION.

THE specific object of the following pages is to explain, for the information of European capitalists, the nature of the security afforded by American Railway Mortgage Bonds (*Anglice*, debentures), and their suitability for investment.

The opportuneness of a publication giving such explanations appears to be very obvious. There is certainly no common knowledge in Europe among the mass of quiet capitalists of what American railways are. English railways, and some foreign lines, as well as one or two American lines, are comparatively well known. An investor can easily obtain some approximate notion of what his speculation is worth, should he buy the ordinary stocks of these railways, or what his margin will be should he take up the debentures or preference stocks, and what are the legal rights and remedies which guarantee him peaceful possession of his property. But the character of American railways generally is certainly not known. The ordinary investor could not say roughly what American railways would pay him as a shareholder, or what privileges and margin he would have as a holder of debentures or preference stock. He could not even say, in the most general way, what kind of property in a mass American railways are, how much money they represent, and what sort of income they yield, and what are their distinguishing peculiarities as regards the legal rights of their shareholders and creditors. The most that he knows, or thinks he knows, is that American railway shares, like Erie's, are dangerous to touch, and that "bonds" are advertised to pay rates of interest which almost mean

“bad security.” The result is that, although American Government securities are popular in Europe, and there is a continual export from America of other American stocks, yet there is no extensive competition for American securities of the kind described—nothing like the competition, for instance, which has forced up the four per cent. debenture stocks of the leading English railways to three and four premium. If American railway securities, therefore, are worth knowing, there can be no question as to the need of supplying information.

And whether they are worth knowing or not, the *prima facie* circumstances are such that they should, at least, invite examination. The presumption is that the railway interest in a country like America is not only one of great magnitude—a kind of big fact which gets to be easily known—but must be a very prosperous interest. A country of great distances, full of industrial activity, possessing much water communication both on its frontiers and internally, but not complete water communication so as to supersede other highroads, must be the very ideal land of profitable railways. The business must be large and will bear very heavy charges for conveyance. And this presumption is fortified by the fact that American railways have been made almost wholly by American money—that is, by the surplus capital of a country where seven per cent. and upwards is the ruling rate of interest. It may be taken for granted that the profits of railway making and working in such a state must have ruled higher than in old countries; and that if foreign investment avoids them the reason must be ignorance or prejudice, and nothing else. It can hardly be the real existence of any dangerous insecurity in the mass of the investments themselves, for if there were, the insecurity would soon be fatal to native as well as to foreign investment. Certainly if there were any dangerous peculiarity affecting the foreign and not the native investor, the European capitalist ought to be able to give some account of it. Upon any hypothesis, that of ignorance or prejudice, which keeps European capitalists from understanding the real position of what is presumably a good thing, or that of



some real vice in the thing itself, which contradicts the presumption in its favour, it is manifestly desirable that the fullest information should be circulated.

The general aim of this paper is thus distinctly limited, but it will be observed that a farther limitation is intended. Incidentally it will be necessary to treat of American railways generally, but the more precise object is to speak of the security of the Bonds. The reason for this is that real debentures offer the most suitable means for lending foreign capital to a new country. The foreign capitalist finds it most difficult to engage directly in business or as a shareholder in a distant country. He cannot control the management, and cannot easily watch it. The competition on the spot for the possession of the most profitable enterprises is likely to be too active for him. But to lend money at the current high rates of interest ought to be comparatively easy to him. The only task he has, is to find out solvent debtors who have abundant security to offer, and if the laws of the country only work fairly he ought to be as absolutely sure of his money as on similar mortgages at home, with the important difference that he receives a much higher rate of interest. Railway debentures, moreover, are a kind of security which he ought to understand very quickly. He is familiarised at home with the conditions respecting the amount of margin desirable in a first-class security, and if he only knew enough of American railways to see how much margin a certain gross traffic would imply, he might be just as familiar with the conditions to be sought for in America. The obstacle of distance would remain, but the only effect of that should be to compel him to resort to a rather more roundabout process for discovering the character of the debtors whom he selects. The investor and his usual guides ought to find as much certainty in the final transactions as they do at home. It is for these reasons that the present pages are addressed, not to the few who are disposed to run all the risks of foreign adventures, but to the mass of quieter people who live on their money, and wish only to invest at the highest safety rate.

## II.

*THE AVERAGE PROFITS OF AMERICAN RAILWAYS.*

IN any business transaction, it is the particular business or security dealt with which must be examined, but there are good reasons why such special examination should be preceded by a general knowledge of the whole class to which the special security belongs. The general knowledge is a great safeguard against latent defects in the particular transaction. The investor, or purchaser, is able to see whether the property he buys or lends upon is like other property in similar circumstances, or is marked by any peculiarity; whether, in short, the apparent conditions of its alleged value are reasonable, and like the conditions which usually exist in the case of similar property. Such general knowledge, where a vast mass of property is presented for investigation, is also a guide to the special localities or description of securities, where farther and particular examinations are most likely to reward the trouble of making them.

For these reasons it is proposed to look at American railways in the mass, not only for the purpose of familiarising European capitalists with the subject, so as to break down the barriers which ignorance and prejudice now offer to investment, but for the direct business purpose of facilitating subsequent inquiries into the conditions of particular undertakings, and of guiding the capitalist as to what undertakings are likely most to reward his examination.

Now it is not very easy to look at American railways in the mass so as to get a tolerably correct notion of their profitableness, on account of a simple peculiarity of the American constitution.

The United States, as we are often apt to forget in England, is not a homogeneous State, but a group of numerous States; and though the division may be disregarded for many purposes—in such questions as foreign policy, currency, customs laws, and others—the railways are one of the great home questions where the division cannot be disregarded. There are only one or two inter-State railways—mainly the Pacific railways—under the general laws of the Union. All the others are organised under the separate State laws. One result is that for statistical purposes there is no good official information regarding American railways, such as we possess in England regarding our home railways. There is, as yet, no central department of the United States' Government which has anything to do with the matter,\* and the statistical information, if it exists, is nowhere brought together and summarised in an authentic official form. The defect would be less remarkable if each State had separate statistics, on a uniform plan, which individual enterprise could digest, but it is almost a necessary result of the division that the question should hardly even have attracted attention; that in most States there is little attempt at statistics of any kind; that where official information is given it is given piecemeal and in every variety of form, according to the difference of object in the publication. It has been necessary, therefore, to resort largely to unofficial sources of information, and though these, as we shall see, are very ample, there are, nevertheless, certain defects, and not a little trouble has been necessary to work out any clear result.

The principal source of information is *Poor's Railroad Manual*,† a most excellent publication, which contains in detail an account of every railway company in the United States, and is supplemented by a tabular summary, classified according to the different States, of the information thus afforded. But the defects

\* Since this was written I have been informed that it is proposed to establish a Central Railway Bureau at Washington.

† *Manual of the Railroads of the United States for 1872-3*. By Henry V. Poor. (New York: H. V. and H. W. Poor. 1872.)



which are incidental to an unofficial publication of the kind, however excellent, are—that voluntary enterprise has not in all cases been successful in extracting the information required from the various Companies applied to, and the summary itself does not embrace all the points on which information would be desirable for a bird's-eye view. One very important point, for instance, on which there is no general information in the tabular summary, is the train mileage, from which could be deduced the guiding facts of the receipts and expenses per train mile, the value of which to intending investors acquainted with railways it would be needless to dwell upon. The defects are far from important enough to prevent a good general notion being formed of the whole subject; but it will be necessary to keep them in mind, and point out in what cases and to what probable extent they will qualify the conclusions arrived at.

The defect of the sources of information is shown at the very threshold of the subject. The initial questions in a general inquiry are—the extent of the system inquired into, and the capital spent upon the property upon which dividends have to be earned. Now these questions can hardly be answered with completeness and precision, so as to form the basis of a subsequent account of the earnings and profits. According to the sketch prefixed to the *Manual*, which we use as an authority, “The cost of the railroads of the country will average \$50,000 to the mile; the total for the 60,852 miles, being, in round numbers, \$3,000,000,000.”\* In other words, in investigating the railways of the United States we have to do with a system of 61,000 miles in extent, which represents a capital of about 550,000,000*l.*, or 9,200*l.* per mile. †

This would contrast in a very obvious way with the United

\* *Poor's Railroad Manual*, Prefatory Sketch, p. xxvi.

† We have converted the dollar throughout at 3*s.* 8*d.* A large portion of the American railways was no doubt constructed when the dollar was at the par of 4*s.* 2*d.*, but a large part has also been constructed with a capital expressed in a currency of fluctuating value, and the accounts are, of course, kept in currency. It seems necessary, therefore, to allow for the existing depreciation in putting dollar values into English money, and this, it is thought, is approximately arrived at by conversion at 3*s.* 8*d.*

Kingdom as regards extent, although nearly the same capital has been spent,—the corresponding figures for the United Kingdom in 1870, according to the Board of Trade Returns, having been 15,537 miles, and 530,000,000*l.* of capital, or about 35,000*l.* per mile. But when we examine the tabular summary to which we have referred, the general notion of American railways does not come out exactly as represented in the sketch. We have taken the trouble to digest the summary (*see* Appendix, Tables I., II., and III.), and the result is that instead of 60,582 miles, we find we have only to deal with 48,022 miles, which represent a capital of 518,642,000*l.*, or about 10,800*l.* per mile. The real disagreement is, however, not so much as the apparent one. The mileage referred to in the sketch is the mileage opened at the end of the year; and if the figure at the beginning of the year had been taken, it would have been 53,000, instead of 61,000,—the increase of mileage last year having been 7,453. As the tabular summary gives particulars of the earnings and expenses,—and these could hardly exist as to the lines opened in the course of the year,—it is quite reasonable to expect that the railway system of which a profit and loss account can be given, should form a smaller aggregate than the entire system referred to in the sketch. Still, there is a considerable difference even between 48,000 and 53,000 miles which is not easy to account for. The statements in the sketch and in the tabular summary might perhaps be reconciled if we suppose the mileage in the sketch to include sidings and the like, which have not been included in the figure we take from the summary, and if added, would make that figure 58,000, instead of 48,000, bringing it into approximate correspondence with the sketch—perhaps into as close a correspondence as could be looked for, when, in a rapidly growing system, the one total refers to the actual aggregate, and the other only to the aggregate so far as it has been working long enough to enable a profit and loss account to be given. In any case, for the purposes of the present sketch, we shall have to take the second set of figures, and not the first, and deal with American railways as a profit-bearing aggregate of 48,000, instead of 61,000 miles. If we are correct in supposing that



the 61,000 miles include sidings and the like, then, as these sidings are 10,000 miles, the entire aggregate, according to English reckoning, would not exceed 51,000 miles, which does not much differ from the profit-bearing aggregate dealt with in the tabular summary which we have digested for the purpose of the present essay. So far as we can judge the details concerning the 48,000 miles will not only give an approximately correct average of the American system, but will give an approximately correct notion of the actual magnitude of that system.\*

Subject to these observations, we subjoin the following summary of the most important facts relating to American railways:—

Mileage 48,022	Per Mile.	
	£	£
Total capital . . . . .	518,642,000	10,800
Stock . . . . .	275,644,000	5,700
Funded debt . . . . .	224,142,000	4,700
Floating debt . . . . .	17,268,000	360
Cost of road equipment, &c. . . . .	433,267,000	9,000
Gross earnings . . . . .	76,591,000	1,595
Earnings from passengers . . . . .	22,301,000	—
Earnings from goods . . . . .	50,195,000	—
Earnings from other sources . . . . .	4,095,000	—
Proportion of passenger earnings to total earnings . . . . .	29 per cent.	
Working expenses, taxes, rents, &c. . . . .	49,931,000	1,040
Proportion of expenses to gross earnings . . . . .	65 per cent.	
Net earnings . . . . .	26,660,000	555
Proportion of net to gross earnings . . . . .	35 per cent.	
Percentage of net earnings on capital . . . . .	£5 2s. 11d. per cent.	
Percentage of net earnings on cost of road, equipment, &c. . . . .	£6 3s. 1d. per cent.	
Percentage of net earnings on funded and floating debt . . . . .	£11 os. 10d. per cent.	

Those who are conversant with railways will obtain from this

\* The only doubt that might arise on this point is due to the possible refusal of information which may make the details of the tabular summary incomplete; but looking down the summary, we find only ten cases in which mileage information is refused. The cases of refusal are exclusively in the least developed Western and Southern States, and cannot be of much importance, as there are about 400 railway companies in America averaging above 100 miles each.

sketch a good notion of what American railway property is. It will be seen that a railway system of 48,000 miles in length, and which costs its owners a nominal capital of 519,000,000*l.*, or 10,800*l.* per mile, has brought them in a gross income of 76,591,000*l.*, or 1,595*l.* per mile, but earned at a cost of 49,931,000*l.*, or 1,040*l.* per mile—that is, 65 per cent. of the gross income, so that the amount remaining for division is only 35 per cent. of the gross earnings, or 26,660,000*l.*, which makes about 5*l.* 2*s.* 11*d.* per cent. on the nominal capital. The conclusion from such figures would be that, in whatever way the rate of profit earned is to be regarded, the American railways must confer great benefits on the community. The work done, at a cost of nearly 50,000,000*l.*—for the real cost would perhaps be less owing to this expenditure including some items that should be charged to capital—must have been immense; and the American public are all the greater gainers if they have only paid 50 per cent. more for this service than its actual cost, instead of, as in other countries, cent. per cent., or upwards. Though in an indirect way only, this is a most important fact for the capitalist. He would naturally infer, from the great extent of the system, that it is only undeveloped, and the high per centage of the cost to the gross receipts is so far a proof of the surmise. As the system fills up, the profits are likely to increase with great rapidity. The same inference is supported by the character of the work done. The greater bulk of the receipts is from goods, only 29 per cent. being from passengers; so that American railways are essentially business lines, and the goods are carried very nearly at cost price. A service of this sort must stimulate highly the development of the country affected, and speedily lead to more and more profitable work, the margin of profit on the capital expended increasing notwithstanding the continuously high cost at which the increasing gross income is earned. The important point is to increase the *net* income, and the broad facts of American railways indicate that, whether from necessity or intelligent choice, American railway managers are taking the surest way to increase the net income. Of course, with

the growth of the country, the passenger traffic will occupy an increasingly important place in the receipts of American railways; and in a country where the population increases with unusual rapidity, more reliance may perhaps be placed than elsewhere on the increasing profitableness of the railways. The annual increase of population is sure to bring an unusual increase of that sort of traffic which most benefits a railway company, because it may be earned at hardly any additional cost.\*

\* Additional light would have been thrown on this part of the subject if it had been possible to ascertain the average earnings and expenses per train mile—points which are always of importance to the railway investor, as illustrating the character of the profit which is earned. There are two principles of an opposite character which railway companies may apply. One is to restrict the number of trains as much as possible, even to the point of greatly starving the accommodation to the public, in order to swell to the uttermost the receipt per train mile run. The result is that, although owing to the small amount of train mileage, the expense per train mile is also very high as well as the receipts; yet the aggregate expenses and their proportion to the gross earnings are low, and there is a disproportionately large net earning. This is generally the principle followed on the Continent of Europe, where the greatest attention is paid to the exact proportion of trains to the traffic, and many facilities are denied to the public in order that every locomotive and waggon may always be fully employed. The opposite principle is to multiply trains in order to develop traffic, the result aimed at being a large net profit, although the receipt and expense per train mile may both be very low. This principle is characteristic of English railway management, and while it is undoubtedly by far the most beneficial to the public, will, probably, in the end, be more beneficial to the companies themselves, on account of the stimulus to traffic and the consequent more rapid growth of the districts accommodated. Such are the opposite principles, and whatever may be thought of their respective value, it would have been interesting to see which principle is applied in America. It is impossible to answer the question fully, but so far as we can judge, the American practice appears to present more points of resemblance to the English than to the Continental system. In the Annual Report of the Railway Commissioner for the State of Ohio for the year ending June, 1871, we find the following data:—

	No.
Train miles run by locomotives . . .	47,005,277
	Amount.
Aggregate earnings . . . . .	\$59,151,419
Aggregate operating expenses . . .	40,296,667

from which it may be deduced that on the lines organised under the laws of the above state, the average earning per train mile is almost exactly one and a quarter dollars, or about 4s. 7d., and the average expenditure about 3s. These are figures which imply a multiplicity of trains, as may be seen from the corresponding figures



The points in this summary come out very clear to the English railway capitalist. American railways must be a very different sort of property from English railways. Although the capital represented is very nearly the same—530,000,000*l.* English, against 519,000,000*l.* American—the American system is more than three times greater in extent—48,000 miles against 15,500—and does 50 per cent. more business—the American gross earnings being 76,591,000*l.*, against 45,078,000*l.* of the railways of the United Kingdom. The earnings are far from being in proportion to the extent of each system, for if that were the case, the American earnings would be nearly double what they are; but the same expenditure of capital has, nevertheless, produced a much larger amount of business in America than in England. This is clearly shown in another way by the fact that 15,500 miles of the English railway system earn 2,794*l.* per mile, while the American system, though thrice as long, earns 1,595*l.* per mile, or more than half the English earning per mile. When we come to net profit there is a closer approximation. The American receipts are found to have been earned at a cost of 65 per cent., so that a sum of 49,931,000*l.* falls to be deducted from the above total of 76,591,010*l.* before the profit is obtained; whereas the English receipts of 45,078,000*l.* were earned at a cost of only 48 per cent., so that only 21,716,000*l.* falls to be deducted. As the final result, the net annual dividend on American railway capital is found to be 26,660,000*l.*, or about 5*l.* 2*s.* 11*d.* per cent.; whereas the corresponding English dividend is 23,362,000*l.*, or 4*l.* 8*s.* 2*d.* per cent. There is thus a present advantage of 14*s.* 9*d.* per cent. per annum in favour of the

in England, which show an average receipt of 5*s.* 1½*d.* per train mile, and an average expenditure of 2*s.* 6*d.*, the continental averages being considerably higher. If Ohio is a fair specimen of the American system, the American profit would, therefore, appear to be earned not by a process of meagre working so as to get a maximum receipt per train mile even at a high cost, but generally by a process of multiplying trains, so that there may be a large aggregate earning although the receipt and cost per train mile is low. It is believed, as already stated, that this principle is more beneficial than the opposite one in the long run; but whatever may be thought of it, investors will understand the character of the enterprises of which they may be disposed to take the risks, either as shareholders or as mortgagees.

American railway capitalist; but the money has been earned in a very different way, and in a way that promises more growth in the future for the American than for the English system. The amount paid by the English public above cost price for the services which the railways render is more than cent. per cent., and they do much less business in proportion, goods being only 50 per cent. of the whole traffic, instead of, as in America, 70 per cent. The English system is thus more finished, and can hardly have the same room for growth, while the profits are already smaller on the nominal capital.

In reality the comparison is much more favourable to the American system, the above summary containing one more fact which is all-important as regards American profits, and on which especial emphasis must be laid. Hitherto we have compared the earnings with the nominal amount of capital only, but it will be observed there is a separate statement of the cost of road, equipment, &c., which has been a much smaller sum—433,000,000*l.*\* instead of 519,000,000*l.* The distinction is a most substantial one. For various reasons the stocks of American railways have been “watered” to an enormous extent, that is shares and stocks issued without any money or equivalent being received; and the result is that the profit shown on the nominal capital by no means shows the real profit of the investment. The above 27,000,000*l.* of net earnings, therefore, while it gives a profit of only 5*l.* 2*s.* 11*d.* on the nominal capital, is found to yield a profit of 6*l.* 3*s.* 1*d.* per cent. on the actual money which has been spent. It is this per centage of 6*l.* 3*s.* 1*d.* which ought really to be compared with the English per centage of 4*l.* 8*s.* 2*d.* No doubt there is a good deal of English capital which is equally only nominal, but the regulations of English law have prevented financing on the American scale, and the nominal

\* It will be seen on reference to the tables appended that this sum, though much less than the aggregate nominal capital of American railways, includes in many cases an excessive estimate for the cost of the road, &c., the omission in *Poor's Manual* of any statement of this sum having been rectified in a liberal manner so as not to permit of an error in the opposite direction.



capital thus corresponds more nearly to the actual outlay of those who undertook the adventure. The money may have been wastefully spent, but still it was spent; whereas in the American case, the addition to the nominal capital is transparently without equivalent, and represents no real expenditure by those who made the railway. The conclusion is that American railways have been much more profitable enterprises than those of England. An expenditure of 433,000,000*l.* has brought in a net return of 6*l.* 3*s.* 1*d.* per cent., whereas the net return in England on the much larger expenditure of 530,000,000*l.* is only 4*l.* 8*s.* 2*d.* per cent. The result is hardly to be wondered at, for the real expenditure in America according to this mode of calculating, has only been 9,000*l.* per mile, whereas in England it has been 34,000*l.*

Some doubts may perhaps be felt as to whether there is so much real difference between the actual cost of American railways and the nominal capital, but all doubts will disappear when it is explained that the difference arises in reference mainly to one or two railways only, where the process of inflating the capital has been public or avowed. Look only at the following list:—

	Nominal Capital.	Actual Capital Expenditure.	Excess of Nominal Capital.
	\$	\$	\$
Erie . . . . .	117,039,384	58,842,740	58,196,644
New York Central . . .	104,661,216	60,413,657	44,247,559
Pennsylvania . . . . .	72,131,018	34,610,160	37,520,858
Philadelphia and Reading .	52,969,775	41,952,161	11,007,614
Atlantic and Great Western .	89,000,000	25,000,000*	64,000,000
	435,801,393	220,818,718	214,982,675

In these cases alone the difference is about 40,000,000*l.*, and it so happens that one or two are already notorious in England for this very vice of gratuitous inflation, which on any great scale

\* The tabular summary in *Poor's Manual* does not give this figure, but it appears to have been nearly the amount of the actual cost of construction, according to the more detailed statements in the body of the Manual.

is quite peculiar to America as compared with England. Still the fact that a certain species of inflation in special cases has swollen the nominal capital of American railways ought not to obscure our perception of the average profit really earned; and that that average profit is over 6 per cent. against  $4\frac{1}{2}$  or less in England is abundantly clear.

There is yet another fact shown by the above summary, of no little importance for our present purpose, and requiring to be separately dwelt upon, though it is only such as might be expected from the general fact of a high average profit which has already been brought out. This fact is the average high margin of security for the interest on the debt secured by American railways. While the nominal capital, as we have seen, is 519,000,000*l.*, and the dividend given on it by the net earnings is 5*l.* 2*s.* 11*d.*; while a similar dividend on the actual money expenditure of 433,000,000*l.* is 6*l.* 3*s.* 1*d.*; the capital borrowed by the shareholders or holders of the property is only one half the former and two-thirds of the latter amount, or 241,000,000*l.*, and the net earnings are equal to a dividend upon it of 11*l.* 0*s.* 10*d.*, or say 11 per cent. The security of the debenture holders is thus obvious. The average mortgage interest in America is 7 per cent., and at this rate the American debenture holder has a cover of more than 50 per cent. on what he has lent. His preferential dividend of 7 per cent. is secured by an income which is 66 per cent. larger. To put the matter in another form, an interest of 7 per cent. on the railway mortgage debt of America would absorb 16,899,000*l.*, whereas the net earnings, as we have seen, are 26,660,000*l.*, so that there is a margin of altogether 9,761,000*l.* above what they are to receive. As a rule, these American debentures cannot but be well secured, whatever dividends there may or may not be on particular stocks.

It would follow, of course, that as the average dividend on the nominal capital is only 5*l.* 2*s.* 11*d.* per cent., the margin which will remain for the ordinary stockholders, after paying 7 per cent. on nearly half the nominal capital, would not yield a very large dividend. In fact, the above surplus of 9,761,000*l.*, distributed

over 276,000,000/. of ordinary stock, would only give on the average a dividend of  $3\frac{1}{2}$  per cent. It is here that the question of the large amount of "watering" which has occurred becomes important. The difference between the nominal and the real capital, as we have seen, is 86,000,000/., and deducting that from the above 276,000,000/. of stock capital, the average dividend yielded by the above surplus of 9,761,000/., after paying 7 per cent. on the debentures, would be  $5\frac{1}{4}$  per cent. In some way or other those who have ventured their money in the stocks of American railways must have received on the average a return of that amount. Even the holders of the inflated nominal capital should get on the average about  $3\frac{1}{2}$  per cent., but where there has been so much "watering" it is impossible not to distinguish between the owners of the capital really spent, and the holders of the inflated ordinary stock, assuming that the latter have bought at par.

Of course a return of over 5 per cent. is one of no great magnitude for an American speculation, for 7 per cent. is the regular interest of money on good security; but a little reflection will show that such a return on the average implies a state of things in which large profits must have been made by some people, while the remainder have every encouragement to persevere in their venture.

The point always to be remembered is that the American is a quickly extending system. As shown by the subjoined table—which we extract from *Poor's Railroad Manual*\*—half the American rail-

\* *Poor's Railroad Manual*, Introduction, p. xxvi.

Year.	Miles in Operation.	Annual Increase of Mileage.	Year.	Miles in Operation.	Annual Increase of Mileage.
1830	23	—	1840	2,818	515
1831	95	72	1841	3,535	717
1832	229	134	1842	4,026	491
1833	380	151	1843	4,185	159
1834	633	253	1844	4,377	192
1835	1,098	265	1845	4,633	256
1836	1,273	175	1846	4,939	297
1837	1,497	224	1847	5,599	669
1838	1,913	416	1848	5,996	397
1839	2,302	389	1849	7,365	1,369



ways have been constructed since 1860. The mileage in operation in that year was 30,635, and it is now 60,852; and by far the larger part of the additional mileage brought into operation since 1860 has, in fact, been constructed during the last four years. Between 1860 and 1867, owing to the interruption caused by the civil war, only 9,000 miles were constructed, making the total in 1867, 39,244 miles; whereas since 1867 the addition made has been 21,000 miles and upwards, or an addition in four years of more than half to the previously existing system. The above average dividends, therefore, include the return on thousands of miles of railway which have not yet had time to develop their traffic. That it is, nevertheless, above six per cent. on the whole capital expended, is a proof that the ordinary shareholders in the older railways must have received much larger dividends, and that in process of time similar dividends may be looked for on many of the newer lines.

An analysis of the returns, State by State and by groups of States, furnishes a striking confirmation of these remarks. We find that, in fact, it is the railways in the older and more settled parts of the Union which have yielded the largest surplus for the ordinary shareholder after paying an average debenture interest of 7 per cent.

*Continued from page 15.]*

Year.	Miles in Operation.	Annual Increase of Mileage.	Year.	Miles in Operation.	Annual Increase of Mileage.
1850	9,021	1,656	1861	31,256	621
1851	10,982	1,961	1862	32,120	864
1852	12,908	1,926	1863	33,170	1,050
1853	15,360	2,452	1864	33,908	738
1854	16,720	1,360	1865	35,185	1,277
1855	18,374	1,654	1866	37,017	1,832
1856	22,017	3,643	1867	39,244	2,227
1857	24,508	2,491	1868	42,277	3,033
1858	26,968	2,460	1869	47,254	4,999
1859	28,789	1,821	1870	53,399	6,145
1860	30,635	1,846	1871	60,852	7,453



Grouping the States together, we obtain the following figures:—

	Stock.	Mortgages.	Net Earnings.	Required to pay 7 per Cent. on Mortgages.*	Surplus.	
					Amount.	Equal to Dividend on Stock of per Cent. per Ann.
	£	£	£	£	£	
New England States	26,430,492	16,324,537	2,422,528	1,142,715	1,279,811	4·8
Middle States .....	93,828,719	57,433,333	9,699,013	4,020,333	5,678,680	6·1
Western States.....	111,464,817	107,345,056	10,642,282	7,514,196	3,128,086	2·8
Southern States .....	26,708,821	30,720,306	2,219,312	2,150,421	68,891	0·3

From this table it will be clearly perceived that it is the New England and Middle States, as a rule, which have as yet been the most productive for railway enterprise; and it is in these States that there has lately been the least proportionate addition to the American railway system. Since 1867, as we have seen, the addition has amounted to 50 per cent. on the previously existing system; but in the New England and Middle States the addition has been much less, viz. :—

	Mileage of Railways in 1867.†	Mileage of Railways in 1871.†	Increase.	
			Amount.	Per Cent.
New England States . .	3,938	4,898	960	24·7
Middle States . . . . .	9,555	12,380	2,825	29·7

The growth of railways has, therefore, been much lower in these older States, New York, Pennsylvania, Massachusetts, and the rest, and the average profits shown are greater. As yet, these old States are also the most populous, but this source of larger

\* This is more than is really paid in many cases.

† The totals here given are not exactly the same as in the tables appended. The difference partly arises from the tables appended relating only to a total of 48,000, whereas the figures here relate to the whole system of 61,000. Another cause of difference is that the figures in the sketch relate to the mileage only, whereas in dealing with railways as a profit-bearing aggregate in the tables appended, it has not been possible to make a clear separation between States; a railway company authorised in one State having often property in another, so that the figures relating to it are included under the head of the State of its origin.

profit is partly compensated, as in England, by the greater original cost of railway construction. As regards profit, the principal cause of difference between them and the newer States that can be assigned, is the fact that in the newer States there is a much larger proportion of undeveloped lines.

The analysis, State by State,\* will, however, bring out several additional points, and this, among others, that there are several Western and Southern States which may fairly be placed alongside of the average older States in respect of profit. The analysis is as follows:—

	Stock.	Mortgages.	Net Earnings.	Required to pay 7 per Cent. on Mortgages.	Surplus.	
					Amount.	Equal to Dividend on Stock of per Cent. per Ann.
	£	£	£	£	£	
Maine .....	2,375,564	3,224,905	247,762	225,743	22,019	0·9
New Hampshire .....	1,996,353	548,860	165,033	38,420	126,613	6·3
Vermont .....	1,608,617	729,352	157,990	51,054	106,936	6·6
Massachusetts .....	14,993,489	8,121,513	1,259,254	568,506	690,748	4·6
Rhode Island .....	426,308	222,312	77,364	15,562	61,802	14·5
Connecticut .....	5,030,160	3,477,611	515,129	243,433	271,696	5·4
New York .....	44,111,330	17,060,541	2,643,007	1,194,238	1,448,769	3·3
New Jersey .....	11,753,529	9,657,303	1,804,554	676,011	1,128,543	9·7
Pennsylvania .....	33,435,447	26,398,936	4,485,755	1,847,926	2,637,829	7·9
Delaware .....	364,590	555,051	21,041	38,853	—17,812	—
Maryland .....	4,163,823	3,761,502	744,658	263,305	481,353	11·7
Ohio .....	31,660,659	34,046,678	3,168,980	2,383,267	785,713	2·2
Michigan .....	4,306,535	4,192,498	545,681	293,475	252,206	5·9
Indiana .....	13,247,657	13,885,264	1,135,558	971,968	163,590	1·2
Illinois .....	25,441,042	15,188,456	3,248,917	1,063,192	2,185,725	8·6
Wisconsin .....	5,178,840	4,034,130	525,060	282,389	242,671	4·7
Minnesota .....	2,937,293	6,331,753	114,151	443,223	—329,072	—
Iowa .....	9,119,734	8,126,412	563,242	568,849	—5,607	—
Kansas .....	6,733,375	10,707,658	357,934	749,536	—391,602	—
Nebraska .....	871,663	2,364,292	205,678	165,501	40,177	4·7
Missouri .....	11,968,017	8,468,516	777,083	592,796	184,287	1·6
Virginia .....	4,763,186	6,634,576	371,847	464,420	—92,573	—
North Carolina .....	3,112,021	1,071,547	145,630	75,008	70,622	2·3
South Carolina .....	2,489,591	3,116,814	262,417	218,177	44,240	1·8
Georgia .....	5,143,292	2,247,161	425,018	157,301	267,717	5·2
Alabama .....	2,132,850	2,340,777	118,441	163,856	—45,415	—
Mississippi .....	1,031,609	3,914,052	157,743	273,984	—116,241	—
Louisiana .....	2,502,500	3,419,166	74,192	239,341	—165,149	—
Texas .....	1,248,219	2,165,294	253,428	151,571	101,857	8·4
Kentucky .....	3,088,812	3,525,199	248,045	246,763	—1,282	—
Tennessee .....	1,196,741	2,285,720	162,556	160,000	2,556	0·2

\* See note † page 17.

From this table it will be seen that such States as Illinois are, as we should expect, fairly entitled to compete with older States like Pennsylvania, and New Jersey, in regard to the profitableness of their railways. In the South, the States of Georgia and the Carolinas also stand very well in respect of profit. The average dividend on American railway stocks is thus found to be the result of a mixture of high and low dividends; but the high dividends preponderate, and the low return is limited to the newer and most undeveloped States, where there has recently been the greatest proportionate amount of railway extension. The division in profitableness is, in fact, geographical, but the circumstances are such that we may be quite sure the causes of the comparatively small return in the least developed districts are, in the majority of instances, only temporary. The conditions of profit are naturally the same, as in the States where railways are now most profitable, and only time is wanted for the railways of these States to grow up to the old standard.

The second point, however, which is brought out by this analysis, State by State, is the fact that in comparatively few cases is the average earning insufficient to pay the debenture interest. In only nine States—Delaware, Minnesota, Iowa, Kansas, Virginia, Alabama, Mississippi, Louisiana, Kentucky—does it appear that there is any deficiency. The aggregate mileage of these States is, moreover, only about 10,000, not more than a sixth of the whole mileage of the Union, and the capital is 77,000,000/., or about a seventh of the whole nominal capital raised. The districts where there is a deficiency to pay the debenture interest are thus comparatively small, and represent no large amount of the total capital embarked. The actual deficiency to pay the debentures, reckoning the interest at 7 per cent., is besides not very great, not more than about 40 per cent. of the sum that would be required. If we omit the three States of Minnesota, Kansas, and Louisiana, the deficiency would be quite insignificant, viz :—



	Deficiency.	Mortgage Capital.	Rate per cent. per annum of deficiency on Mortgage Capital.
Iowa . . . . .	£ 5,607	£ 8,126,000	Nominal.
Delaware . . . . .	17,812	555,000	3½
Virginia . . . . .	92,573	6,634,000	1¼
Alabama . . . . .	45,415	2,341,000	2
Mississippi . . . . .	186,244	3,914,000	2½
Kentucky . . . . .	1,282	3,525,000	Nominal.
Total . . . . .	278,930	25,095,000	1½

Thus, in six States out of the nine, the deficiency only amounts to about 1½ per cent. on the average, and in two of these, Iowa and Kentucky, it is only a nominal deficiency. There are thus only three States of any consequence—Minnesota, Kansas, and Louisiana—where the deficiency even in appearance is serious.

Considering the extent to which American railways have been constructed with faith in the future, the conclusion is most satisfactory for intending holders of debentures. In the great majority of States there is a very large margin to secure the investor, and in all but a very few a sufficient margin; and in most even of these few the deficiency on the average is really very small. An investor at random in American railway debentures would in the worst case have been sure of the greater part of the income on which he calculated.

The appearance of the facts as presented in *Poor's Manual*, is, moreover, found, on examination, to be much worse than the reality. We have already referred to the necessary incompleteness of an unofficial work of this sort, and it is precisely in the Western and Southern States where the data are most incomplete. It is from these districts chiefly that there are reports of information refused, while probably, from the newness of the lines, the information, where furnished, is defective on one or more points. The railways in the Western States appear more-



over to have suffered in the summary from their connection with adjacent States. The Iowa and Minnesota systems in particular, instead of being wholly independent, are really worked, to a large extent, by the two great lines of Illinois—the Illinois Central and the Chicago and North-western—which thus get credited with the traffic of their newer neighbours, although the capital account of the latter is presented in a complete form in the State group. Taking account of these facts, we find that a summary embracing with more accuracy the independent lines of Iowa, for instance, would present the following results:—

	Mortgages.	Net Earnings.	Required to pay 7 per cent. on Mortgages.	Surplus or Deficiency Amount.
	Dols.	Dols.	Dols.	Dols.
Burlington, Cedar Rapids, and Minnesota	5,000,000	468,000	350,000	+168,000
Burlington and Missouri .....	11,286,000	1,112,000	790,000	+322,000
Cedar Rapids and Missouri.....	3,614,000	493,000	253,000	+240,000
Central of Iowa.....	4,000,000	132,000	280,000	-148,000
Chicago, Iowa, and Nebraska.....	810,000	461,000	57,000	+404,000
Desmonie's Valley .....	7,000,000	253,000	490,000	-255,000
Dubuque, South Western .....	531,000	73,000	36,000	+ 37,000
Iowa Falls and Sioux City .....	2,960,000	99,000	207,000	-108,000
	35,201,000	3,073,000	2,473,000	+600,000

Thus, instead of a deficiency, Iowa really shows a surplus above the amount required to pay 7 per cent. on its mortgage debt. The Iowa lines could pay very nearly 9 per cent. The apparent deficiency had, in fact, arisen, in part, from the capital statement, including two lines—the Cedar Falls and Minnesota, and Dubuque and Sioux City—which are leased to the Illinois Central. Inaccuracies like these are perhaps incidental to the cross-divisions arising from railway systems which overlap two or more States, and which are grouped together in every variety of form, but the rectification in particular cases may be important, though in the aggregate there is no material error. Instead of classing Iowa with the States, which do not earn enough to pay their debenture interest, it ought to be classed with those which have a surplus. And this elimination of Iowa alters materially any significance

that may lie in the fact that there are some States where the railways do not pay their debenture interest.

Not to speak of similar rectifications which might be made, it has been found that there are six States out of the nine which do not quite earn their debenture interest, (or rather eight, since we ought to except Iowa) where the deficiency is quite insignificant, and now we see that there are only three—Minnesota, Kansas, and Louisiana—representing a mortgage capital of only 20,000,000/., where there is any serious deficiency. Most of this deficiency is found in turn to be due to the share of Kansas in the Pacific Railway, the mortgage debt of the Kansas Pacific amounting to 7,000,000/.; and this enterprise was so mixed up with political considerations, besides being yet undeveloped, that it is perhaps hardly fair to include it in a general summary. Excluding it the whole railway mileage of the States where the debenture interest is at all seriously in doubt, including ten different railways, is under 2,000 miles, and this is undoubtedly a very small section of the gigantic American system. The truth is that there are “States” and “States,” and though it is convenient to adopt the political division, it ought not to be forgotten that the States which show to least advantage in point of profit are not to be compared as units with the States which show a better return.

We come back to the conclusion then that the American debenture holder is well secured by the average net earnings of the system. In only nine States is there any doubt, but in one of these it is found, on examination, that there is really a surplus, in five more the deficiency is inconsiderable, and in the three where it is of any consequence, the whole railway system, compared with the aggregate of the United States, is but of small extent, while most of the deficiency is in fact due to the exceptional and undeveloped enterprise of the Pacific Railway. There are other considerations, as we shall see, to reassure the debenture holders in some of these doubtful cases, but in regard to present net earnings, the account, it must be admitted, is exceedingly good.

## III.

*THE CONDITIONS AND DISTRIBUTION OF  
PROFIT.*

UP to this point we have been dealing only with averages; we have been treating the entire railways of the United States as a single system, to bring out, if possible, the average character of the railway business of the country, the standard with which an investing capitalist may compare any particular undertaking presented to him. In exhibiting such an average it is hardly possible to avoid noticing the nature of the extremes which help to compose it, and so bringing in the question of the conditions of profit and its distribution upon the capital employed. But these points require a separate and minute inquiry, as they are, in fact, the vital points for the capitalist. When the inquiry relates to the adventure of so large a capital as four or five hundred millions sterling in a single branch of industrial enterprise in a single country, it would be folly to expect an uniform result. Mistakes are sure to be made, and profits will vary with individual enterprise and judgment in almost an infinite degree. When the enterprise in question is one of railway construction, there is an additional reason for varying rates of profit, in the local interests which favour the making of lines for other reasons than the direct profit which results. The real reason of a railway enterprise which fails temporarily and even permanently in direct profit, may easily be the hope of gain from private industrial or land speculation of the owners of the railway in their private capacity. It is essential, then, for the capitalist who looks to the profit of the



railway to understand fully what the extremes are which go to make up an average such as we have described,—especially what are the conditions of the extreme of high profits or of profits that come up to and exceed the average. It will be, no doubt, satisfactory to the quiet investor, if, on the whole, the mistakes are few and the ordinary run of things is good, but that is no reason for not seeking out where the greatest safety lies.

The abstract conditions of profit in railways are easily enough laid down. There must, in the first place, be a monopoly of communication of that kind more or less complete. If two roads are made where one would do, profit must be earned on two capitals instead of one, and it is easily conceivable that roads might be so multiplied as to make a fair amount of profit on the aggregate capital impossible. It is important for capitalists not only to avoid an enterprise which at best can only succeed in reducing the profits of all the competitors to an unremunerative level, but to see that an undertaking which depends upon monopoly has the monopoly sufficiently secured for the purpose he has in view. In the next place, the most valuable monopolies for railway purposes are to be found exclusively in facilitating transport between large groups of an industrious population. What the capitalist should seek in a railway investment is a line between crowded centres of population, who have much business to exchange, and manifold and close relations of every kind. The greater the natural or acquired wealth of such a people to begin with, the better for the capitalist's purpose; but industry now leads so inevitably to wealth in these days of steam and machinery, that, assuming an industrious population which can use scientific discovery and invention, the existence of wealth may be inferred. Applying these conditions to the case of the United States, we have to see in what districts they are most fully complied with, and where, therefore, we must look for profitable railways.

The first condition, that of monopoly, is partly dependent on legislation, but not wholly so, and the natural circumstances which favour monopoly are, in the United States, of singular



weight. The magnitude of the country and the distance between important centres necessitate construction on a large scale, either by a single company or by a set, which are at first mutually dependent and in the end finally amalgamate. In the result an immense capital is embarked in building the minimum railroad communication between two centres, or two "reservoirs"\* of traffic. And the very magnitude of this first investment is a barrier to competing investment on a similar scale. There is not enterprise enough for competition, although small capitals could be tempted for a smaller enterprise which would yet violate the essential condition of profit. In cases where competition has arisen, and has been followed by the usual result of compromise, the capital engaged in what becomes a common monopoly, that may still be exceedingly profitable, is immense, and farther competition is hardly to be thought of. We see this even in the narrow area of England, where the expense caused by distance in America is compensated by the expense of purchasing the land on which the shorter lines must be made. The difficulty is increased in consequence of the trunk line acquiring a sufficient portion of the branch lines of its districts to command the entire traffic, so that a competitor to succeed must make branches as well.

The other conditions of industry, and of skill to apply scientific discovery and invention, are notoriously present in the people of the United States. We might, therefore, content ourselves with assuming their existence, and passing on to the direct question of where they are most present. But there is one point in connection with them which is of universal importance in considering the profits of the railways. This is the rate of growth of the population and of the wealth. In all countries this is important. In England the growth has been such, that a railway-system which

\* This is the happy phrase used by the witnesses before the recent Joint Committee in this country on Railway Amalgamation, with reference to the traffic of Lancashire and Yorkshire. These counties, it was said, contain a reservoir of traffic with which every leading railway in the kingdom which approached it was anxious to be connected.

for years was ruinous to its owners because of waste and competition almost beyond belief, has at length begun to occupy a position in point of profit such as might have been expected from the beginning, had the capital then spent been proportioned to the roads then needed. The country since 1866, when the last dose of contractors' lines was infused into the system, has increased its receipts from railway traffic from 38,000,000*l.* to 48,000,000*l.*,\* or more than 25 per cent., and has consequently increased enormously the net profit, so that far more is paid to the holders of stock, and the margin, after covering debentures and preferences, is enormously increased. In England, where such results are yielded, the growth of population is rather under 1 per cent. per annum, and of wealth it has been calculated about  $2\frac{1}{2}$  per cent. per annum.† But this is nothing to the American rates of growth. Prior to 1860, the population of the United States increased as follows : ‡

Year.			Population.			Increase per Cent.
1790	...	...	3,929,000	...	...	.....
1800	...	...	5,308,000	...	...	35·2
1810	...	...	7,240,000	...	...	36·4
1820	...	...	9,634,000	...	...	33·1
1830	...	...	12,866,000	...	...	33·4
1840	...	...	17,069,000	...	...	32·7
1850	...	...	23,192,000	...	...	35·9
1860	...	...	31,443,000	...	...	35·6

Between 1860 and 1870 the civil war occurred, with its lamentable loss of life and interruption of immigration, but the increase in that decade was nevertheless from 31,443,000 to 38,558,000, or 22 per cent., which is at least two-thirds of the former rate of increase, and more than double the English rate of growth. It remains to be seen whether the rate of growth which existed before the war will be resumed, and it may be acknow-

\* The traffic of 1871.

† See *Economist*, May 14, 1870, pp. 596-7.

‡ The figures in the text relating to the United States' population are taken from the official statistics of the last census.

ledged to be quite likely that as the increase of communication equalises the European with the American standard of wages, the immigration into the United States on which the increase of population depends will diminish in amount.\* It is all but certain, however, that for many years to come, the population of the United States will increase not only by a natural excess of births over deaths as great as that shown by any other community, but by immigration on a colossal scale. The rate of growth must far exceed that of 8 or 9 per cent. in a decade which prevails in the United Kingdom, and which, in consequence of emigration, is less than it would otherwise be.

The increase of wealth in the United States is equally on an unprecedented scale. To obtain any trustworthy statistics on such a point is inherently difficult, and the inference that in England the rate of growth is about  $2\frac{1}{2}$  per cent. per annum is only established approximately by a careful comparison of scattered data. The figures which are given, therefore, by American economists can only be accepted with some reserve, though they urge with no little plausibility that America has better data than most countries in consequence of the universal prevalence of State taxes which are assessed upon the aggregate real and personal property in each State.† The following statement (with the exception of the figures for 1870, which are here added) is furnished by Mr. Wells, who is so well known in this country for his Reports, as the United States Commissioner of Revenue, and for the lead he has taken in promoting the reforms of the United States' revenue laws:‡

\* An immigration from China would be so different from an immigration from Europe, that its effects, and the probability or improbability of its occurrence seem hardly calculable.

† See a pamphlet on *The Wealth, Resources, and Public Debt of the United States*, by George Walker. London: Printed by E. Couchman & Co. 1865.

‡ See table quoted by Mr. Walker in the above pamphlet, p. 9.



SHOWING THE POPULATION AND WEALTH OF THE UNITED STATES by Decades, from 1790 to 1860; decennial per-centage increase of population; decennial per-centage increase of national wealth; and average property to each person.

Year.	Population.	Value of real and personal property.	Decennial per-centage increase of population.	Decennial per-centage increase of wealth.	Average property to each person.
1790	3,929,827	(estimated) \$750,000,000	.....	.....	\$187·00
1800	5,305,937	(estimated) 1,072,000,000	35·02 per cent.	43 per cent.	202·13
1810	7,239,814	(estimated) 1,500,000,000	36·43 „	39 „	207·20
1820	9,638,191	(estimated) 1,882,000,000	33·13 „	25·4 „	195·00
1830	12,866,020	(estimated) 2,653,000,000	33·49 „	41 „	206·00
1840	17,069,453	(official) 3,764,000,000	32·67 „	41·7 „	220·00
1850	23,191,876	(official) 7,135,780,000	35·87 „	89·6 „	307·67
1860	31,500,000	(official) 16,159,000,000	35·59 „	126·42 „	510·00
1870	38,558,000	30,069,000,000	22·00 „	86·13 „	776·96*

The figures in this table sound incredible, yet if wealth increases in England twice as fast as the population, the rate of increase in the United States between 1840 and 1850 should at least be credible, as it is in little more than the same ratio, and many reasons could be urged for believing in the higher rate between 1850 and 1860. The peculiarity of an increase of wealth in the United States, as in most of our English speaking colonies, is the sudden development of latent powers existing in the natural properties of a hitherto unoccupied soil. The new wealth is either created by mining or by an analogous application of industry—for there is really no difference in degree or in kind between opening a mine and constructing a railway into a naturally fertile region, which labourers flock to cultivate—and labour

\* But allowance ought to be made here for the depreciation of the dollar between 1860 and 1870.



and capital so applied are known to be peculiarly productive. A little touch of labour suddenly makes available what was previously unused, and the real wealth of the labourers is enormously increased.

Such being the causes why the United States generally is a most profitable field for railway enterprise, we have now to inquire as proposed, where these causes exist in their greatest intensity, and what is the extreme of profit which goes to make up the high average described. A very little inquiry shows in what direction we must look. The crowded centres of the United States, in connecting which the most profitable railways are likely to be made, are to be found in what is comparatively a narrow circle compared with the enormous area of the country. The whole area of the United States is 2,915,000 square miles, but casting an eye over the map we find that while in the south and the extreme west there are populous settlements at wide intervals from each other, there is one region in the north, with Chicago at the one extremity and New York, Boston, and Philadelphia at the other, forming only one-fifteenth of the whole territory, in which the population is more crowded than elsewhere, the cities are larger and more numerous, and while the agriculture is very productive there is also a larger mixture of mining and manufacturing industry. This fifteenth part, comprising the States of New York, Pennsylvania, Illinois, and Ohio, with one or two of the smaller New England States, and containing altogether about the same area as France, is peopled by upwards of 16,000,000 inhabitants, or very nearly half the United States population at the last census, which is about the same as that of France. In other words, the United States, in addition to nuclei of population scattered over its wide area, and numerous districts which are rather occupied by scattered farmers or squatters than settled in any proper sense of the word, also contains a comparative small corner settled up to a standard which approaches that of Europe, and every way richer in natural wealth than any district of Europe which could be named. It is in this region then we must look for profitable railways, dismissing first

of all from our minds the notion that the United States is altogether and everywhere an empty country compared with Europe, the fact as regards New England and the Middle States being clearly the reverse.

Let us see precisely what the facts are. The population, as ascertained at the last census in 1870, of the under-mentioned eight States which have an aggregate area of 209,473 square miles, (only 4,000 square miles more than the area of France before the cession of Alsace and Lorraine) was as follows:—

	Area. Square Miles.	Population.
Massachusetts . . . . .	7,800	1,457,351
Rhode Island . . . . .	1,306	217,353
Connecticut . . . . .	4,674	537,454
New York . . . . .	46,000	4,382,759
New Jersey . . . . .	8,320	906,096
Pennsylvania . . . . .	46,000	3,521,951
Ohio . . . . .	39,964	2,665,260
Illinois . . . . .	55,409	2,539,891
	209,473	16,228,115

Here, therefore, we have a comparatively crowded population within the area of France, possessing unrivalled natural opportunities and devoting itself mainly to pursuits analogous to mining, which involve a necessity for railways and are likely to make them pay. And the statistics which show how much of the wealth of the United States is possessed by this minority of the people are also very striking. The "true value" of the real and personal estate within the various States and territories of the American Union is now officially estimated at thirty thousand

millions of dollars, but of this amount the above eight States contain much more than half, viz. :—

	Dollars.
Massachusetts . . . . .	2,132,148,741
Rhode Island . . . . .	296,965,646
Connecticut . . . . .	774,631,524
New York . . . . .	6,500,841,264
New Jersey . . . . .	940,976,064
Pennsylvania . . . . .	3,808,340,112
Ohio . . . . .	2,235,430,300
Illinois . . . . .	2,121,680,579
Total . . . . .	18,811,014,230

This is very nearly *two-thirds* of the total valuation of the United States, owned by a community which is less than half in numbers, the exact comparison being :—

	Population.		Valuation.	
	Numbers.	PerCent.	Amount.	PerCent.
Eight States . . . . .	16,228,115	42·1	\$ 18,811,014,230	62·5
Remaining States and Territories	22,327,868	57·9	11,257,504,277	37·5
	38,555,983	100·0	30,068,518,507	100·0

In other words the two-fifths of the United States population which are contained in the above eight States, comprising only one-fifteenth of the whole area of the Union, possess three-fifths of the property.

To give still more weight to these facts, it should be added that the large city population of the United States is mainly comprised in the narrow region we are describing. Of fifty principal cities in the Union, possessing 5,775,000 inhabitants, or on the average 125,000 a-piece, the above eight States contain thirty-three, possessing 4,007,000 inhabitants, that is about 72 per cent.



of the whole city population of the Union. The following is a list of these cities :—

New York . . . . .	942,292	Brought over . . . . .	3,469,019
Philadelphia . . . . .	674,022	Syracuse . . . . .	43,051
Brooklyn . . . . .	396,099	Worcester . . . . .	41,105
Chicago . . . . .	154,420	Lowell . . . . .	40,928
Boston . . . . .	250,526	Cambridge . . . . .	39,634
Cincinnati . . . . .	216,239	Hartford . . . . .	37,180
Buffalo . . . . .	117,714	Scranton . . . . .	35,092
Newark . . . . .	105,059	Reading . . . . .	33,930
Cleveland . . . . .	92,829	Paterso . . . . .	33,579
Pittsburg . . . . .	86,076	Toledo . . . . .	31,584
Jersey City . . . . .	82,546	Columbus . . . . .	31,274
Albany . . . . .	69,422	Dayton . . . . .	30,473
Providence . . . . .	68,904	Lawrence . . . . .	28,921
Rochester . . . . .	62,386	Utica . . . . .	28,804
Alleghany . . . . .	53,180	Charlestown . . . . .	28,323
New Haven . . . . .	50,840	Lynn . . . . .	28,233
Troy . . . . .	46,465	Fall River . . . . .	26,766
Over . . . . .	<u>3,469,019</u>	Total . . . . .	<u>4,007,896</u>

The significance of these facts will be allowed by every one who studies the conditions of profit in such enterprises. When we find that two-fifths of a great industrial community are in possession of three-fifths of the whole property, and comprise in their numbers 72 per cent. of the city population of that community, we see at once where lie the crowded centres of population in that country which it will be most profitable to connect, and which will contribute most to the high average of profit which the railways of that community are found to yield.

This crowded region, moreover, benefits by the less settled regions which are adjacent. The States of Indiana, Iowa, Michigan, Minnesota, Missouri, and Wisconsin, which adjoin, though they are much more sparsely settled, containing only 7,274,387 inhabitants, spread over a territory of 349,932 square miles, are, nevertheless, mainly developed or "mined" from the centres in the above eight States, and their inhabited districts fringe these more central States. We have already seen that Iowa, for instance, is a mere extension of Illinois, and it is the same with Minnesota; and though Missouri is perhaps more independent, Michigan, Indiana, and Wisconsin are closely related to the above eight States.



These States are therefore the centre of a large and important outlying population. But it is unnecessary to insist on this point. The direct facts as to the eight States themselves are quite sufficient to serve as a guide to the field of most profitable railway enterprises.

What, then, are the facts in respect of railway profits which the statistics of these States show? The table which we print above, at p. 18, has partly answered the question,—all of the States exhibiting a considerable surplus beyond what is required to pay 7 per cent. as their debt. Massachusetts shows a surplus equal to 4·6 per cent. on its capital stock; Rhode Island, 14½ per cent.; New Jersey, 9·7 per cent.; Pennsylvania, 7·9 per cent.; New York (notwithstanding the peculiar exception of Erie), 3·3 per cent.

A further analysis shows not only that these States are among those which exhibit the largest surplus, but that their system, taken together, while forming a very large section of the whole system of the Union, exhibits results far above the average. Their mileage, capital, mortgages, and gross and net earnings are:—

	Mileage.	Capital.	Mortgages.	Gross Earnings.	Net Earnings.
		£	£	£	£
Massachusetts.....	1,364	23,115,000	8,122,000	4,178,000	1,259,000
Rhode Island .....	76	649,000	222,000	166,000	77,000
Connecticut .....	825	8,508,000	3,478,000	1,584,000	515,000
New York .....	4,085	60,995,000	17,061,000	9,776,000	2,643,000
New Jersey.....	902	21,372,000	9,657,000	3,812,000	1,804,000
Pennsylvania .....	3,574	59,837,000	26,399,000	12,385,000	4,486,000
Ohio .....	4,823	66,262,000	34,047,000	9,553,000	3,169,000
Illinois .....	5,042	40,630,000	15,188,000	8,138,000	3,249,000
	20,691	281,368,000	114,174,000	49,592,000	17,202,000

From this table it is evident that though in mileage the system of the eight States, extending to 20,000 miles, is much less than half the total mileage with which we have been dealing, yet in capital and gross and net earnings it is much more than half. Its capital is 281,000,000/., whereas the whole capital of the 48,000 miles is only 519,000,000/.; and its mortgage capital of 114,000,000/., is also about half the entire total of 241,000,000/. In respect of

earnings, the gross earnings are 49,592,000*l.*, or nearly 70 per cent. of the total of 77,000,000*l.*; the net earnings are 17,202,000*l.*, or nearly two-thirds of the total of 27,000,000*l.* The importance of the eight States in a railway view is thus apparent, and it will be understood that the account of profit now to be analysed is not that of a small and unimportant section of the United States railways, but of really the bigger half.

It has already been noticed that the area occupied by these railways is about the size of France, and a comparison of these railway figures with the corresponding totals for France will perhaps furnish a better idea than could otherwise be obtained of the extraordinary activity of Americans in railway enterprise. In France the completed mileage is 11,000 as against 20,000 in the above eight States, the aggregate capital engaged being, however, 260,000,000*l.* as compared with 281,000,000*l.* On the other hand the gross receipts instead of being 50,000,000*l.*, as in the above eight States, are under 30,000,000*l.*

The average profit in the above eight States is also very large. The general result is that on the entire nominal capital of 281,000,000*l.*, 17,202,000*l.* of net earnings are equal to a dividend of about exactly  $6\frac{1}{2}$  per cent., which is about 1 per cent. more than the general average for the United States, and nearly 2 per cent. more than the general average for the United Kingdom. It so happens that in this section a good deal of the "watering" of stock, to which we have alluded, has taken place; and if we compare the cost of the lines with the net earnings, we obtain a most astonishing result. The cost of construction, &c., in these eight States has been:—

	£
Massachusetts . . . . .	18,379,000
Rhode Island . . . . .	600,000
Connecticut . . . . .	6,214,000
New York . . . . .	41,310,000
New Jersey . . . . .	20,380,000
Pennsylvania . . . . .	48,740,000
Ohio . . . . .	48,601,000
Illinois . . . . .	40,973,000
Total . . . . .	225,197,000

upon which the net earnings would give a dividend of about  $7\frac{3}{4}$  per cent., which is the real average return on the actual capital sunk in railways in this section of the United States,—the average for the whole country having been, as we saw, 6*l.* 3*s.* 1*d.* Respecting the surplus, after covering the debentures, it is almost unnecessary to speak. On 114,174,000*l.* of debenture capital, the average dividend yielded by 17,202,000*l.* of net earnings, would be upwards of 15 per cent., so that the debentures are literally much more than twice covered. The amount required to pay 7 per cent. would be 7,992,000*l.*, leaving a surplus of 9,210,000*l.* Here, again, the position of the eight States is much better than that of the whole country. The average dividend of the entire net earnings on the entire railway debenture capital of the United States is 11 per cent., and the debentures are not quite twice covered; but here the average dividend is upwards of 15 per cent., and the debentures are much more than twice covered. If surprise ought to be felt, therefore, at the results as regards the whole capital embarked in United States railways, there is much greater room for surprise at the results as applied to a distinct area, larger than many old countries, and containing in itself a railway system that would rank among the leading systems in the world.

To obtain a still nearer view of the matter we have taken pains to analyse the returns in respect of each railway in this section. The question will be asked—what proportion of the large capital engaged really does participate in the profits shown, or are there only a few favourites of fortune? And an answer can only be given by making it possible to exhibit the results for each. The analysis which is given in Table IV. of the Appendix will, it is hoped, be sufficient to satisfy the utmost curiosity. We find that the railway system of these States includes altogether about 160 undertakings, now more or less distinct, and that of these there are 134 representing a total mileage of 15,200 miles, a total capital of 207,000,000*l.*, and a total expenditure of 169,000,000*l.*, which exhibit the following results:—



	Mileage.	Total Capital.	Net earnings.	Interest on borrowed money.	Surplus after paying Interest.
		£	£	£	£
25 Railways paying 10 per cent. and upwards .....	5,286	76,052,000	7,761,000	1,416,000	6,345,000
35 Railways paying 7 per cent. and upwards .....	5,339	71,024,000	5,650,000	1,392,000	4,251,000
24 Railways paying less than 7 per cent. ....	1,346	15,822,000	943,000	344,000	599,000
84 Total dividend paying lines	11,971	162,898,000	14,354,000	3,159,000	11,195,000
50 Railways paying no dividend but with surplus after paying interest as bonds*	3,342	44,051,000	1,523,000	1,023,000	500,000
134 Total.....	15,213	206,949,000	15,877,000	4,182,000	11,695,000

It follows from this account that the great bulk of the railways within this district really do share in the high average profits earned. The account embraces three-fourths of the mileage in these States, and the most general result is that there is a net income of 15,877,000/. to be divided upon a nominal capital of 207,000,000/. The total capital of these States, as we have seen, being 281,000,000/., at least three-fourths of that capital is connected with enterprises which not only earn some profit available to pay the interest on their debts, but have a surplus,—in the great majority of cases an enormous surplus,—after discharging that interest. A further analysis shows that the companies which pay

\* The existence of a class of railways of this sort ought specially to be noticed as an American peculiarity. The fact that some particular line pays no dividend does not always imply that no profit has been earned. Large sums are applied in "improvements" out of the profits earned, and in the official railway report for Ohio it is calculated that out of an aggregate net earning of \$18,000,000, the railways in the State applied no less than \$4,000,000 to new works. The practice is foreign to the English notion of an accurate separation between capital and revenue, but in a country where capital is in demand, the application of profits to railway extension is a very tempting use of them, of which the stock-holders reap the benefit. In several cases in the Appendix, it will be seen the surplus thus applicable is very large. It need hardly be added that where such a system exists, an altogether false impression of American railway-profits would be created by merely counting up the dividend-paying lines and contrasting them with the non-paying—a proceeding which is farther misleading, in consequence of the extreme difference in the size of the companies.



over 7 per cent. to their stock-holders after paying their bond interest, represent more than half the total capital invested in railways in these States; and that the companies which pay over 10 per cent. represent one-fourth of the capital. The aggregate surplus, after paying the interest on the debts of all these companies, is 11,695,000*l.*; and as the aggregate stock capital, as will be seen from the Table in the Appendix, is 135,000,000*l.*, the average dividend on this 135,000,000*l.* of capital is  $8\frac{1}{2}$  per cent.

Of a portion of the other railways in the above States a less favourable account must be given. Leaving out a few altogether, of which there are not sufficient materials to give an account, an analysis similar to the above would show that there are about thirty companies, with an aggregate mileage of 3,000 miles, which do not earn enough to pay their debenture interest. The list would include such lines as the Atlantic and Great Western, the Boston, Hartford and Erie, and numerous small dependencies of such main lines as the Erie, which appear to be peculiarly placed. The fact is quite enough to show that large profits are not uniform even on American railways; that there is ample room for folly and mismanagement of the worst sort; and that probably many enterprises have been badly conceived and executed. Still a considerable part of the deficiency in many of these cases is to be accounted for by the incompleteness of the schemes; the list in the *Manual* necessarily including many newly-constructed lines or branches, and the figures of gross and net earnings stated being in several cases for less periods than a twelvemonth, in consequence of the lines being newly opened. It is also stated by American authorities that it is habitually the practice where lines are operated by larger railways for payment of a fixed rental, to carry as much as possible of the aggregate earnings to the credit of the main line. In most cases where a deficiency is shown, the interest on the debentures, and sometimes a dividend on the stock of the leased line, is guaranteed by the main undertaking, although a separate account of the earnings of the leased line is made up. A writer in England has, of course, little opportunity of judging for

himself as to the extent to which this practice is carried out, but it is *primâ facie* credible that it should be widely followed. The practical conclusion is that the existence in several cases of an apparent deficiency of earnings, and in other cases of what is, at present at least, a real deficiency, makes it expedient in any particular investment to inquire into all the facts which bear on its safety and profit. It would have been unreasonable to expect any other result, even if the average profits resulting from railway enterprise in America, and the facts as to the large part of the capital which really does participate in that profit, had been still more surprising than they are.

Another cause, however, of the account being less favourable than it might be is from the necessary omission of the details of several lines where the railway enterprise is mixed up with a separate speculation—a combination more likely to occur in a mining region than elsewhere. Of this sort are the Delaware and Hudson, which pays 10 per cent. to its stock-holders, partly from its coal business; and the Pennsylvania Coal, which pays 20 per cent. in a similar manner. In these and other instances the railways are openly worked as auxiliary to other speculations, and it would be impossible to give any proper account of the railway by itself, even if we had the full account before us. But the statement of the fact is necessary to a complete review of the whole class of investments.

The conclusion is thus established that while American railways are generally profitable—much more profitable by comparison than those of England—the conditions of profit are not substantially different, and that attention to these conditions will reward the prudent investor. In America, as elsewhere, the localities to be sought for are marked out by the nature of the industries carried on, the crowding of the population, and the amount of exchange between the crowded centres. Where there is much population and industry, and much communication, the railways to be constructed will *cæteris paribus* enjoy the maximum of profit, even if they are more costly to build. But in America, where these conditions are attended to, the rate of profit is very high. There is enough risk to make attention needful, but not any extraordinary or unprecedented risk.

It is a qualifying consideration of no little importance in the case of America, however, that the rate of growth makes it less important than usual to reckon strictly the existing capabilities of a railway district. The reckoning should always be made, and often, for purposes of speedy profit, in a country of slow rate of growth nothing else should be considered, but in a country like America a strict reckoning of this sort, and nothing else, would be pedantic and absurd. It is manifest that States like those with which we have been dealing change almost from year to year. Look only at the following figures :—

	Population.		Increase.		Average annual increase per Cent.
	1870.	1860.	Amount.	Per Cent.	
Massachusetts .....	1,443,000	1,221,000	222,000	18·2	1·8
Rhode Island .....	212,000	171,000	41,000	23·9	2·4
Connecticut .....	528,000	452,000	76,000	16·9	1·7
New York .....	4,330,000	3,832,000	498,000	13·0	1·3
New Jersey .....	875,000	647,000	228,000	35·2	3·5
Pennsylvania .....	3,457,000	2,849,000	608,000	21·4	2·1
Ohio .....	2,602,000	2,303,000	299,000	13·0	1·3
Illinois .....	2,511,000	1,704,000	807,000	47·4	4·7

The lowest rate of increase it will be perceived is 1·3 per cent. per annum, still much higher than the average growth of population in England, which is 0·8 per cent. ; and while the average for the United States is 2·2 per cent. per annum, in several of the above States it is much higher—in Illinois all but 5 per cent. Such rates of growth alter very materially even the near prospects of railways affected by them. They imply a greatly increasing business at no proportionate additional cost for working. An allowance for additional population on the route traversed ought therefore to be made in estimating the worth of many American lines. Discrimination, of course, is required in dealing with what must always be a contingency, but the actual rate of growth on adjacent lines, and the probability of the circumstances continuing which cause the growth, are more or less calculable elements with which a prudent investor can deal. Looked at in this way, the field of future profit may be found to be not so much in the older States, with which we have been dealing, as in the immediately surrounding States,



such as Iowa, Minnesota, Indiana, Wisconsin, and Missouri, where settlement is as yet less advanced, but the conditions are such that it can hardly fail to extend. It is in the change from a moderately sparse population to a population comparatively crowded that the greatest increase of profit is likely to occur, and where railway bond interest in rapidly growing States is only just covered, or barely covered now, some confidence may be felt in the creation of a large and increasing margin at a very early date.

Another qualifying consideration which is sometimes put forward is the value of the concessions of land, which in the Western States are sometimes made to projected companies to stimulate the railway construction. As already pointed out, there are several actual cases in which railways have been utilised as auxiliary to other speculations. There is thus some *primâ facie* reason for setting a value on land grants, and as the topic is so important and comes up a good deal in accounts of American railways, it deserves a chapter by itself.\*

There remain only two points which we shall notice in connection with this topic of the conditions of profit in railway enterprise in America. There is one principal condition that somewhat diminishes the profit, and, large as it is, makes it less than it would otherwise be. This is the multiplicity of companies, which necessarily causes a great waste in administration. There are about 400 companies in the *Manual* which we have summarised in the Appendix, and the number of separate administrations, though not quite so great as the number of companies, is very large. The matter is not nearly so bad as it looks, for a few great companies administer, as in England, the trunk lines of the system and many of the branches, the large number of companies being partly due to the multiplication of very small lines, but the division and subdivision, where a few centralised administrations would be enough, cannot but be a source of endless expense and waste. As we shall see the multiplication of companies is a consequence of the excessive application of the

\* See following Chapter.



principle of competition in American railway legislation, and perhaps also of the magnitude of the field open for enterprise; but however the evil originates it is none the less an evil, and the system is now so advanced that in the older States at least a complete consolidation should be the next step contemplated by those who are interested in the property.

The other point is the mode of working, *apropos* of the proper maintenance of the lines and the material of equipment. A too painful experience has taught the investor in England that nothing is easier for a time than to pay dividends partly out of capital, or more destructive afterwards for those connected with lines where such practices have been pursued. It may be assumed as quite certain that such practices are not unknown in America, though, as they work their own cure, it may also be assumed that the averages which have been dealt with here are approximately correct, and are not likely to be seriously modified by any corrections that ought to be made because of the accounts summarised not showing a really sufficient expenditure in maintenance and repairs. Still, the point is well worth attending to, and, according to one or two indications we have obtained, the mode of working cannot be in all cases satisfactory. From the report of the Railway Commission for Ohio already cited, we learn that, while the train mileage in 1870-71 was 47,005,000 miles, the number of locomotives by which that work was done was 1,717, which would give an average of 28,000 miles per annum for each locomotive. According to English experience, this is a wasteful mode of working, the formula being that the annual mileage worked by a single locomotive ought not to exceed 20,000 miles, and a line like the London and North Western only working up to 17,000. The defect may arise from some inherent difficulty in equipping American lines, due to the scarcity of capital; but it is, nevertheless, a serious defect, and ought to be compensated by a correspondingly heavy expenditure on repairs and maintenance of rolling stock, which it will be very tempting to neglect.

## IV.

*THE LAND GRANTS.*

WE come then to the question of the way in which investment in American railways should be affected by those land grants of which so much is heard. Keeping that element out of view, the lines of railway enterprise in America, as we have seen, are clearly enough marked out. The connection between great centres of population and industry, the opening up of markets to wealthy mining districts, or to fertile agricultural districts, where the new wealth gathered is obtained by an analogous process of comparatively little labour—such are the tasks which it will profit the railway capitalist to engage in. In a country like America the marvellous rate of growth of population makes it necessary not to regard too exclusively existing population, but to combine with these an estimate of the capacities of the districts considered, and the probability of their rapid development; still the principle is the same, and the capitalist must inquire in every case that comes before him in what degree of intensity the usual conditions of profit exist. At this stage a new and special element of profit is put before him, as worthy of affecting his judgment materially. The United States and State governments, it is pointed out, have granted a bounty in the shape of tracts of land along the line of certain proposed railways, and this bounty, if it does not induce capitalists to make railways, which would otherwise be unremunerative for many years, until the districts fill up, should at least enhance the attractions of lines where there is good

reason to believe the speculation would ultimately answer. What opinion then ought a capitalist to form regarding these grants, and what weight should he give them in considering a new scheme?

The system, as described in the reports of the Commissioner of General Land Office, is for the United States to confer on particular States, in which there is an unoccupied public domain the privilege of aiding proposed railways within the State by the grant of the odd or even numbered sections of land within a moderate distance on either side of the line. In addition, the United States has directly made large grants to the companies owning the Pacific Railways, but the general system has been to make the grants through the agency of particular State governments. A little reflection will show that grants of this sort must be of very varying value, and intending investors will require to examine carefully what are the particular circumstances. The land alongside what promises to be a great trunk line, and towards which population is already tending, is clearly to be reckoned at a higher rate than land which must always be on a branch, which has nothing special in its favour, and which may fill up more slowly than other land.

Another point is that it must necessarily take time to realise the grant, and that for many years—for a period at least beyond which the capitalist is not likely to extend his vision—no high prices will be obtainable. The capitalist, in fact, receives in a land grant the present of a small capital which he can only convert into cash by gradual sales over a series of years. These conditions are created by the general land system of the United States. Not only has the United States Homestead Acts, under which the public land can be cheaply occupied, there is a more general law, under which settlers can obtain directly from the State a grant of land at the minimum price of  $1\frac{1}{4}$  dollar per acre; and though railways have the advantage of location, a bounty of this kind undoubtedly keeps down the price. Railways, moreover, have no monopoly even of the land near their lines. The Government



retains the alternate sections under the pledge not to dispose of them below the minimum price of  $2\frac{1}{2}$  dollars per acre, double the usual price under the general law, but every way disposed by its traditional policy not to exceed that minimum, in order that settlement may be promoted in every possible way. Railway companies moreover, even if they had a monopoly, would require to balance the policy of obtaining the highest possible price for their land against the policy of encouraging settlement and traffic by which in another way they would gain. These conditions as to price would affect the value of the most extensive land grant, but their existence makes it all important that in every special case the extent of the grant should be scrutinised. In the first grant of the kind the breadth of the tract upon which alternate sections were granted was six miles on both sides of the line; and in the Pacific Railway grants the limit was at first ten miles on both sides of the line, and was afterwards raised to twenty. If the limit in any case should be narrow, not only will there be less land to realise, but the chance of competition from settlements in the general domain just outside the limit at the low minimum price of  $1\frac{1}{4}$  dollar per acre will be increased.

Under these conditions, we should say beforehand that, as a rule, the main value of the land grant will be to mitigate the original capital cost of construction, into which the element of interest paid during construction and until remunerating traffic is obtained must enter very largely in all cases where there are extensive land grants, for the simple reason that the districts traversed are, *ex hypothesi*, undeveloped. The original cost will be something like 8,000*l.* or 10,000*l.* a mile, involving an annual outlay for interest of nearly 1,000*l.* per mile, at which rate 1,000 acres per mile at 20*s.* per acre would require to be annually sold in order from that source to keep down the interest. As the alternate sections not held by the railway are likely to be settled *pari passu*, this would imply that settlement proceeds at the rate of 2,000 acres per annum along each mile of railway which has land grants, and as the mileage which land grants have promoted is calculated



at over 10,000,\* this rate of settlement would mean an annual taking up of 20,000,000 acres, or about half the whole arable area of England, and about half the whole area under corn crops in the United States in 1867.† The taking up must obviously be far short of this enormous quantity, and on the average, therefore, it can hardly be expected that land grants will suffice to meet the interest on the capital expended. Where a railway can meet such interest, or nearly meet it from other sources, the land grant may be of the utmost value in maintaining solvency and gradually redeeming the capital; but it can hardly on the average be a substitute for the ordinary sources of profit. It need not be said that if the average value of a land grant is low, the capitalist is bound to examine with all the more care, what special circumstances in a particular case may give it an exceptional value.

The actual history of land grants confirms the expectations which might have been formed as to the part they were likely to play. Immense grants have, in truth, been made by the United States Government, but the amount "certified and patented" to particular States for division had not amounted altogether, in 1869, to much more than the acreage that would require to be taken up in one year in order to make these grants suffice for the interest charge on the nominal capital of the undertakings.

The following is a "statement exhibiting land concessions by Acts of Congress to States and corporations for railroad and military purposes, from the year 1850 to June, 1869," with an account of the quantities certified and patented under the grants.

\* See *Report of Commissioner of General Land Office for 1869*, p. 68.

† *Agricultural Statistics for the United Kingdom*. The area under corn crops in the United States in 1867 was 41,000,000 acres.

States.	Number of acres certified and patented under the Grants.	Estimated number of acres coming under the Grants.
	Acres.	Acres.
Illinois . . . . .	2,595,053	2,595,053
Mississippi . . . . .	908,680	2,062,240
Alabama . . . . .	2,288,139	3,729,120
Florida . . . . .	1,760,468	2,360,114
Louisiana . . . . .	1,070,405	1,578,720
Arkansas . . . . .	1,793,167	4,744,272
Missouri . . . . .	1,715,435	3,745,160
Iowa . . . . .	3,215,669	7,331,208
Michigan . . . . .	2,717,497	5,327,931
Wisconsin . . . . .	1,479,710	5,378,360
Minnesota . . . . .	2,510,284	7,783,403
Kansas . . . . .		7,753,000
California . . . . .		2,060,000
Oregon . . . . .		1,660,000
	22,056,507	58,108,581
Corporations.		
Pacific Railroads . . . .	164,801	124,000,000
	22,221,308	182,108,581

Thus, 22,221,308 acres, out of the immense grant of 182,000,000, had been certified and patented in 1869, and even at 2*l.* an acre, the maximum price which appears to have been obtained on a large scale, the whole value of this amount, when realised, would be 44,000,000*l.* At an average price of 20*s.* per acre, the whole value would be 22,000,000*l.*, which has not all been realised, so that less than this amount—a sum, probably, a good deal less—represents the total actual contribution by land grants to the cost of railway construction in the above fourteen States in the course of twenty years.

The railway accounts, as summarised in *Poor's Railroad Manual*, do not give sufficient details to enable a statement to be drawn up of the quantities of land annually sold of the railways under the grants, the average price received, and the proportion borne by these receipts to the whole net income of the line or to the capital expended, according as they are carried to revenue or capital. But the figures obtainable incline one to the belief that the sales cannot be at a very rapid rate. If that were the case, the amount

certified would probably increase with rapidity, a demand for certificates arising from the rapid construction of railways, but the amount certified increases but slowly.

In June, 1869; the amount certified, as stated	
above, was . . . . .	22,221,308 acres.
And in June, 1867,* the amount was . . . . .	21,484,851 „
Increase in two years . . . . .	736,457 „

At 20s. an acre this would make about 750,000*l.* worth of land, certified in two years, or 375,000*l.* per annum, which at 8,000*l.* per mile would suffice for the construction of about fifty miles of line. Of course the amount certified annually may not at all correspond with the amount actually sold, but the two processes over a long period must keep pace with each other, and it may perhaps be safely inferred from the smallness of the certificates in two consecutive years that the annual sales are correspondingly small.

On the average it would seem that even in very favourable cases the per-centage of land taken up in proportion to the grants does not exceed about 5 per cent. The case of the Illinois Central, which had a large land grant—2,595,000 acres—may be taken in illustration. Altogether, in twenty-one years ending the 1st of January, 1872, it had sold 2,216,000 acres of this grant, or rather more than 100,000 acres, which is not over 5 per cent., annually. The Kansas Pacific Railway has also been disposing of its grants at a much slower rate. Out of 6,000,000 acres between Kansas City and Denver, which were offered for sale in January, 1868, it disposed of in the four years ending 1871, a total of 740,000 acres, or about 185,000 acres per annum, which is just about 3 per cent. of the grant. It is probable enough that in particular years, and favoured by special circumstances, some companies may be able to dispose of their lands at a quicker rate, but it would hardly be safe for a capitalist to reckon on the average on an annual sale of more than 5 per cent. of his grant, or even of so much.

The facts appear also to confirm what we have stated

\* See Report of Commissioner, General Land Office, for 1867.



regarding the price obtainable. In some cases it is only possible to obtain three or four dollars per acre. The Kansas Pacific Company, in the four years of its sales has obtained the following average prices per acre :—

1868	.	.	.	.	.	.	\$2.57
1869	.	.	.	.	.	.	2.62
1870	.	.	.	.	.	.	3.13
1871	.	.	.	.	.	.	3.58
Average							2.90*

In the conspicuous case of the Illinois Central, the total realised from the 2,216,000 acres disposed of in twenty-one years is stated to have been 23,561,000 dollars, or about 11 dollars per acre. The range of price is thus in round figures between 3 dollars and 11 dollars, or between 11s. and 40s. per acre. The Flint and Père Marquette (Michigan) Railway of which the particulars are also given in *Poor's Manual*, has received an intermediate price between the two, or 7.73 dollars per cent., equivalent to 29s. per acre. The details on this point are necessarily scattered, but facts like these apparently indicate that little more than 11s. per acre, should be reckoned on with certainty beforehand, that 25s. will be a good average, and that 40s. is about the maximum that can be got for a very large grant. Coupled with the prospect of realising between 3 and 5 per cent. of the quantity annually in favourable cases, the capitalists before whom a land grant comes as an aid to constructing a railway will have some means of estimating its probable value.†

In the most favourable case, such as that of the Illinois Central, it may be added, the land grant will certainly have a sensible effect in increasing the net income of the company. The annual receipt has been about as nearly as possible 200,000 dollars on the average during the last twenty years, or about 6 per cent. of the current net earnings of about 3,000,000 dollars annually. The

\* *Poor's Manual for 1872-3*, p. 341.

† It is also worth noting that the sales appear usually not to be made for cash, but payment is deferred,—an additional difficulty in realising the security.



addition is a sensible one to the amount available for dividends and, in many cases, where there is a large debenture and preference capital, would be enough to make the difference between a good dividend and a bad. Even in the case of the Illinois Central, however, the real gain of the grant was not so much as this. It was coupled with a stipulation that, in lieu of all State taxes, the company should pay to the State 7 per cent. of its annual gross earnings. Under this stipulation the company pays about 460,000 dollars annually to the State. If there is any excess in this amount over the sum that would otherwise be payable to the State, that excess would require to be deducted from the above receipts from sales of lands, to show what the net profit of the land grant has really been. Not only, therefore, must a railway capitalist see that his land grant is likely to be really profitable, it will be necessary to guard against limitations and conditions which may filch away his profit. Taking this precaution there are certainly cases in which land grants may be of considerable value, and whether much or little they will always be of some value if the location is at all favourable. But every particular case should be fully examined and considered before capital is embarked on the faith of it.

## V.

*CONCLUDING REMARKS.—THE LEGAL POSITION  
OF AMERICAN RAILWAYS.*

As an account of American railways our remarks might stop short at the point we have already come to, but it is conceived there may be room for one or two additional observations gathering up the most important conclusions which appear to have been arrived at, pointing out their practical bearing, and treating of one or two general topics of importance to investors which it has not been possible to take up in a mere description of the material value of the investments. In dealing with investments abroad, one of the first points for a capitalist must always be the laws of the country to which he trusts his money, and the practical working of these laws, whether affecting him as an alien, or affecting the special property with which he proposes to have dealings. It would be out of place here to summarise the body of American law in regard to railways, but there are one or two principles of general interest widely adopted in America regarding which a foreign investor may usefully possess some knowledge.

The main conclusion as to the value of American railways may be very briefly stated. It is simply that there is an immense mass of capital embarked in these railways which receives, on the average, a high rate of profit as compared with English railways; that a very large part of this capital, the portion invested in the ordinary or common stocks of eight Northern States, which constitute the most populous region of the country, receives a very high rate of profit; and that, above all, there is a large mass of

borrowed capital, upwards of 200,000,000*l.*, which is, on the average, secured in the agreed interest by a huge surplus, while the portion on which the property pledged yields an insufficient return is very small indeed. It is considered that in these facts will be found a sufficient reason for the European capitalist turning his attention more and more to America. Whether his object be a speculative profit or a good and secure investment, he has a tempting field before him.

It is suggested, however, that for the bulk of capitalists the object is not likely to be a speculative profit. It is obvious that the larger profits will be keenly competed for by American capitalists themselves, and, except under peculiar circumstances, a foreign capitalist would be at a disadvantage in holding the common stock of American railways. He could neither control the management nor keep himself informed of the actual changes in the control. Of course if he should choose to go into such speculations, the lesson of the preceding figures is very plain. The field of large profits is limited by the usual conditions of populousness and wealth in the community which is served by the railways, and of a more or less perfect monopoly in the means of conveyance, and these conditions it would be folly to neglect. Still there are powerful reasons why no large amount of European capital ought to be invested in American railway stocks.

Our remarks have consequently been directed to the question of investment, and the lesson as to the method of procedure which investors may advantageously follow on the facts put before them is also plain. The most beneficial way in which European capital which looks for safety may be invested in railway enterprise is in competing for the obligations of the older and best paying lines. The minimum of needful inquiry and the maximum of safety are here combined, and the return is still sufficient to tempt the European investor. According to the New York price lists, the bonds of first-class railways may be bought to pay nearly 7 per cent. though the competition is already such for a few which happen to be quoted on the London Stock Exchange, that little more



than 6 per cent. can be obtained. We have such quotations as these—

					\$
Illinois Central	.	.	.	7 per cent.	105
Michigan Central	.	.	.	8 „	115
New York Central	.	.	.	6 „	91
New York and New Haven	.	.	.	6 „	98

When it is considered that investors take to foreign stocks like those of Brazil or Russia for a bare 5 per cent., and that the security of France is good for rather less than 6 per cent., it is, perhaps, a little surprising that the obligations of great industrial companies in a country like America, which pay their owners so large a margin above what is required for the mortgage, are even now, by comparison, neglected. The fact is still more surprising when we consider what the competition is for the similar debentures of English railways, and for preference stocks, both of which are secured by a smaller proportionate margin. The competition for the latter is no doubt determined by the provisions of English Trust law, but there is still no small amount of movable money, and the difference between 4 and 7 per cent. is such that where there is equal security the higher rate should have great attractive influence. American insurance companies, it has been remarked, can offer better terms than English companies to their policyholders, because they invest at higher rates of interest, but the high American rates on securities which are available for insurance investment are nearly as available for English companies as for American, and the difference need hardly exist. A more intelligent direction of English capital is all that is required. Of course it will be understood that American mortgage bonds are not *all* to be taken without discrimination. Our object simply has been to point out what is surely as clear as possible, that there is a mass of bonds of which a selection may be made according to the usual rules which would guide investors in similar English securities, with only the difference that the rate rises from 7 instead of from 4 per cent.

While attention should by preference be given on the score

of safety to the first-class bonds of the best paying lines, it is considered that there is some scope for the more skilful and self-judging investor if he takes a wider range of railways than those which are now the best paying. His object is a real safety, and not merely safety of the self-evident kind which is adapted for the trustees of "widows" and "orphans," and if he can get a rather better interest he may well be justified in going farther a-field among American railways. The danger of an absolute failure of interest, though it has not been wholly absent, has, as yet, been comparatively small, and an investor who can choose his line with discrimination, and has the faith to act on the presumption of progressive improvement, which is often applied in similar cases in England, may easily find obligations which will return more than 7 per cent. Discrimination is certainly needed, for serious mistakes have been made, but American railway securities in no way differ in this respect from those of other countries. The permanent condition in the investor's favour is that the progressive improvement to be looked for in America, if a proper selection is made, exceeds anything to be found elsewhere. The continual immigration distinguishes America from any other great field of railway enterprise, and an investor who selects a railway route full of much promise of growth, according to the standards of an old country, may almost calculate with safety on the growth being intensified by the unceasing stream from Europe. In dealing with these newer enterprises, perhaps the greatest difficulty to be encountered will be that of forming a proper estimate of the land grants, which are not to be wholly disregarded, but may be used so easily to back up schemes which are otherwise wholly unsuitable. Where a railway has good independent prospects, the land grants will probably be worth something, but in all other cases they should be suspiciously viewed.

It is at this point that the question of his legal position begins to weigh with an investor, and undoubtedly his greatest difficulty to begin with is not the American law but its practical working, as exhibited in the great scandal of the Erie Railway. It appears

to be one of the unavoidable evils of the American separation into States—we are not of course discussing whether, on the whole, that separation is not expedient—that isolated evils may spring up in particular States which the others are powerless to remedy, and are in no way entangled with, but the evils are in foreign eyes, accustomed to homogeneous States, reflected on the whole country. The separate States are not separate in foreign eyes, and the reproach of New York State has extended to the whole American system. But writing here for English readers, we must admit, without dispute, that there is no answer to the American case—that the States are separate, that mischief in one does not necessarily extend to the others, and that separate inquiry about each will well repay the trouble. In particular, it is urged, the circumstances of New York do not exist elsewhere in the Union, and the like results need not follow. In dealing with such a question, prudent investors may, for their own interest, recognise that the American view is sound, and is conspicuously proved to be so by the mass of genuine railway investments in which Americans themselves place their money with the utmost confidence. After all it should also be remembered that the Erie scandal relates to a capital of about 3,000,000*l.*, that being the capital of the stock-holders before the “watering” which took place under the management that has now been superseded. This is no doubt a large sum, but still it is a mere *bagatelle* compared with the vast mass of American railway capital.

It is moreover urged that in any question of railway *bonds*, the Erie scandal ought not to weigh at all. It is certainly the fact that the debenture interest on the Erie line has been paid all through the former management, and the first mortgage bonds are quoted at 103. The explanation appears to be the peculiar facilities of American law for foreclosing railway mortgages, which we shall notice presently, which made any tampering with the obligations of the bonds peculiarly dangerous. In matter of fact the Erie interest has always been paid. There is no doubt in all this a good deal of truth, and judging by cold reason,



the investor should be satisfied, but it is also certain that whatever may be said, the Erie scandal will produce hesitation and distrust among many of the capitalists whom America desires to encourage, until it is thoroughly cleared away.

Putting this scandal aside, we come to other legal questions, and we can only briefly notice a few. In general we should think the position of stock-holders constitutes an additional difficulty in some cases for foreign capitalists in the way of investing in American railways. The laws of each state usually permit the utmost freedom in establishing corporations, but, as a railway is real property, the foreigner must see that he is not under some disability to own it because of his being an alien, and he must also inquire carefully into his liability as member of a corporation which may *not* be identical in its constitution with an English company under limited liability. Ohio, for instance, makes special provision for enforcing the liability of the partners in a railway for double the amount of their stock. This is a serious liability, and makes it additionally hazardous for foreigners to embark in railway speculation.

But leaving out of sight the difficulties of the stock-holder, there are some peculiarities in the American Constitution and in State laws which are rather in the bond-holder's favour as compared with other countries. One is the express provision in the Constitution that no legislation, whether of the State or of the Union, shall be valid if it impairs the validity of a contract; and that no State may impair the validity of a contract made in other States. The result is, that lawful contracts once made according to State laws, no *ex post facto* legislation, even of the most corrupt State in the Union can impair them. The constitutional limitation is clearly valuable in a country where the separate States are so numerous as in America, and the very separation of authority multiplies the danger of corruption creeping in, while diminishing the scope of its influence. If the States were all powerful there might be some curious legislation, and the limitation on State power is an essential and valuable security for the foreign investor.

The second point is, that as the custom has grown up in the American states of legalising free-trade in establishing railway corporations, the corporations as respects the obligations which they grant have been left to the general operation of the law. The consequence is, that the foreclosing of mortgages is a well-known power in the hands of railway mortgagees. As we have seen, this general power is believed to have been sufficient to deter the late Erie managers from withholding the interest due on the mortgages of the property. At any rate, it is one which is sometimes exercised, one or two among the companies specified in the summary being noted in *Poor's Manual* as worked by mortgage trustees, or sold by the Sheriff, or in the hands of bond-holders. In Ohio, Pennsylvania, and New York, we observe notes of this description, so that the power of foreclosing exists in the leading States, and is less dependent on legislation than on the wording of the deed of trust, in which a provision for foreclosing in case of default is almost universally inserted. It would, of course, be a difficulty of another sort to the investor, warning him against American railways altogether, if such foreclosure were frequent, but the value of the reserve-power is evident. Any tampering of the stock-holders with the net earnings so as to endanger the mortgagee is a very dangerous game. The mortgagee can make good his security at once, and as no public policy controls the number of railways, or requires that once made no creditor shall be allowed to stop the working, the mortgagee may enforce his rights in the most disagreeable way, viz., by selling the rolling stock and equipments. It may not be for his interest to do so, but in conceivable cases the power may be usefully exercised, and at any rate, the foreclosure and sale of railways as going concerns, which is all that a mortgagee need much care for, is a recognised process of American law.

In another aspect this freedom of organising corporations for making railways, which has led to the useful corollary of freedom in enforcing a mortgagee's powers, is not so favourable for an investor. The rule is, in the Western States, at least, that any

corporation establishing itself, may proceed to make a railway, on *first* paying the people whose lands it takes compensation, which is to be fixed in much the same way as by our own acts for taking land for public purposes. The investor's objection to this is that legally there exists in America a system of more unlimited competition than what has damaged the railway proprietor and bond-holder in England. Fortunately, the natural obstacles to competition are, as we have explained, very great in America, and railway profits have been such that an intending bond-holder need have little cause for concern; yet it cannot be doubted that the multiplicity of companies engendered by the system is a hindrance to the influx of foreign capital into American railways. The name of competition is displeasing, and the crowd of small railways increases tenfold the difficulty of selection. We must wish to see American railways following very rapidly the course of consolidation, which has been so beneficial with ourselves. A few visible companies responsible for a great mass of debenture capital, is the system which is most desirable for the foreign investor, apart altogether from the circumstance that the security would be intrinsically improved by the consolidation. It is hardly to be supposed that the motive of attracting foreign capital will have much weight in promoting this consolidation, but foreign opinion and experience may perhaps help to persuade Americans of the fallacy of their cherished competition. The free and easy system may have favoured railway construction in the past, but the use of it is at an end when competition will only promote incessant and barren conflicts with existing corporations. It is, of course, to be foreseen that in America the public will be between two stools in dealing with their railways as a system. The Union and the States have both legislative powers, and neither can interfere with corporations organised under the other's laws. The result may be a set of wealthy corporations almost above law, but the evil is one that must be met directly, and which it is vain to attempt meeting by opposing the natural process of consolidation which no legislation can prevent.



## APPENDIX.

## NOTE.

THERE are one or two points in connection with the following tables, which appear to require explanation, so that the mode of compiling them may be properly understood. As explained in the text, they are made up from the Tabular Summary in the introduction to the last edition of *Poor's Railroad Manual*, pp. xxxii. to xlvii. The details under each State have been added up separately, and then grouped together so as to yield some general results. But it will be understood that in consequence of defective information, and to some extent of double entries,—difficulties which are unavoidable in an unofficial work,—the results obtained are approximative only. An attempt, however, has been made, by means of some corrections, to make the approximation as complete as possible, especially as regards the amount of capital invested, cost of line, and gross and net earnings, which are of the most direct importance in connection with the question of average profit, and have been chiefly dealt with in the preceding pages.

The nature of these corrections has principally been as follows :

1. In several cases where there is no capital statement in the Tabular Summary, the details have been supplied from the body of the *Manual* with as much care as possible, and in one case, that of the Atlantic and Great Western, the amount included has been reduced from 109,000,000 dols., as stated in the Tabular summary, to 89,000,000 dols., which is believed to be the more correct figure. The object has been to include a capital statement for every line where there is also a statement of the gross and net earnings, so that the per-centages of the latter upon the capital employed should not appear greater than they really are.

2. The details in the Tabular Summary respecting the cost of the various lines have been rectified more largely in consequence of numerous omissions. Where no data could be obtained from the body of the *Manual* to supply the omission, the amount of the nominal capital has usually been inserted as the amount of the cost of the line, the object being not to understate the latter figure in the aggregate, but to let the error, if possible, be on the opposite side. The cases of omission are about forty in number, and the amount thus added to what would have come out from a mere addition of the column in the *Manual* is nearly 50,000,000*l*.

3. The columns showing the earnings from passengers, goods, and other sources have been increased by a distribution among them of a proportionate amount of the gross earnings of various lines of which no such details are given. The amount thus added is about 4,000,000*l*., this being the amount of undistributed traffic in the cases where the details are omitted.

4. The column showing the net earnings has been carefully revised, and the result has been to add about 400,000*l*. only to the total obtained from a mere addition of the figures appearing in the same column in the *Manual*.

Generally, it may be useful to state, the entries in the Tabular Summary in the *Manual* appear to have been correctly made from the body of the work, and the error arising from "doubling" which it must have been difficult to avoid, owing to the same traffic appearing in the accounts both of a principal and of a dependent line, is believed to be insignificant.

TABLE I.

STATEMENT of the MILEAGE, ROLLING STOCK, ROAD OPERATED, and TRAFFIC of the RAILWAYS in the United States, summarised from *Poor's Railway Manual* for 1872-73.

State.	Railroad.		Loco. motive Engines	No. of Cars.		Road operated.	Traffic.	
	Main and Branch.	All other tracks.		Passen- ger.	Freight.		Passengers carried.	Freight moved.
	M.	M.				M.	No.	Tons.
Maine .....	933-0	83-5	154	150	2,396	933-0	1,550,204	476,995
New Hampshire .....	380-5	68-0	110	97	2,060	483-0	452,638	839,806
Vermont .....	348-0	147-5	222	162	6,720	1,155-5	150,026	128,555
Massachusetts ...	1,364-0	814-0	577	744	10,666	1,623-5	30,081,652	7,709,759
Rhode Island ...	76-0	9-0	22	25	120	82-5	802,966	223,097
Connecticut .....	825-0	237-0	195	270	3,445	752-5	7,063,515	2,111,323
Total of New England States }	3,926-5	1,359-0	1,280	1,448	25,407	5,030-0	40,101,001	11,489,535
New York .....	4,085-0	1,715-5	1,248	1,110	27,208	4,014-5	11,917,248	14,767,492
New Jersey .....	902-5	727-5	429	525	10,939	1,410-0	5,499,337	4,396,976
Pennsylvania ...	3,574-5	2,512-5	1,869	918	66,957	3,612-0	22,861,747	43,592,031
Delaware .....	162-5	13-5	11	6	70	63-5	126,940	173,243
Maryland .....	661-0	547-2	379	189	6,889	724-5	231,867	2,258,357
Total of Middle States .....	9,385-5	5,516-2	3,936	2,748	112,063	9,824-5	40,137,139	65,188,099
Ohio .....	4,823-0	1,242-0	1,433	759	27,673	4,824-0	8,333,116	14,529,592
Michigan .....	853-5	132-5	221	181	4,437	1,192-0	1,687,725	2,469,173
Indiana .....	2,861-5	265-0	531	315	10,739	2,771-5	2,077,566	2,093,676
Illinois .....	5,042-0	602-5	1,088	573	22,923	5,231-1	6,774,613	8,080,395
Wisconsin .....	1,249-5	136-5	184	118	3,775	1,205-3	899,453	1,539,979
Minnesota .....	923-0	50-5	83	51	1,478	978-0	392,978	488,723
Iowa .....	2,251-0	138-3	150	70	2,500	2,084-5	413,083	464,879
Kansas .....	1,647-5	48-5	191	112	2,879	1,767-5	380,969	449,684
Nebraska .....	915-5	45-5	66	25	1,151	389-5	249,386	320,574
Missouri .....	1,760-0	170-5	365	201	6,226	2,164-5	1,329,569	1,059,251
Total of Western States }	22,326-5	2,831-8	4,312	2,405	83,781	22,607-9	22,538,408	31,495,926
Virginia .....	1,685-0	79-0	216	136	2,484	1,315-0	826,016	1,133,610
N. Carolina .....	930-5	43-0	87	82	991	812-0	248,498	291,151
S. Carolina .....	1,145-5	51-0	141	118	1,314	1,178-5	390,110	228,064
Georgia .....	1,755-5	169-5	290	174	3,762	1,850-5	355,620	430,918
Alabama .....	813-0	59-0	110	59	1,465	716-0	476,177	—
Mississippi .....	1,000-5	69-0	187	42	813	757-5	494,706	315,968
Louisiana .....	412-0	11-0	43	40	670	200-0	—	—
Texas .....	628-0	35-0	92	55	1,683	302-0	97,346	78,499
Kentucky .....	914-0	80-5	149	93	2,271	723-5	927,813	771,755
Tennessee .....	1,047-5	67-0	172	84	1,774	999-5	520,783	571,168
Total of Southern States }	10,331-5	664-0	1,487	883	17,277	8,854-5	4,338,069	38,211,233
Union Pacific, &c	2,052-0	12-0	339	263	5,923	2,572-0	167,760	56,677
Grand Total .....	48,022-0	10,383-0	11,354	7,747	244,401	48,888-9	107,281,377	112,051,370



TABLE II.

STATEMENT of the STOCKS, and FUNDED and FLOATING DEBT, and of the COST of CONSTRUCTION of RAILWAYS in the UNITED STATES, summarised from *Poor's Railway Manual for 1872-3*.

State.	Stocks.	Funded Debt.	Floating Debt.	Capital. (Stocks, Bonds, and Debt.)	Cost of Railroad Equipment.
	£	£	£	£	£
Maine .....	2,375,565	2,658,892	565,995	6,235,159	6,219,604
New Hampshire .....	1,996,353	452,735	96,126	2,545,214	2,349,500
Vermont .....	1,608,617	369,458	359,894	2,337,969	2,338,485
Massachusetts .....	14,993,489	5,747,757	2,373,756	23,115,002	18,378,977
Rhode Island .....	426,308	210,650	11,662	648,617	600,163
Connecticut .....	5,030,160	3,245,015	232,597	8,507,772	6,213,731
Total of N. England States	26,430,492	12,684,507	3,640,030	43,389,733	36,100,460
New York .....	44,111,330	15,296,250	1,764,291	60,994,789	41,303,861
New Jersey .....	11,753,529	9,193,115	464,189	21,372,333	20,379,846
Pennsylvania .....	33,435,447	23,682,112	2,716,825	59,836,399	48,739,480
Delaware .....	364,589	521,923	33,129	919,595	883,990
Maryland .....	4,163,823	3,744,085	17,416	7,934,309	8,639,430
Total of Middle States ...	93,828,718	52,437,485	4,995,850	151,057,425	119,952,607
Ohio .....	31,660,659	31,906,026	2,140,652	66,262,231	48,601,225
Michigan .....	4,306,535	3,943,111	249,387	8,499,032	7,775,604
Indiana .....	13,247,658	12,981,013	904,251	27,469,592	27,207,006
Illinois .....	25,441,042	14,683,029	505,426	40,629,436	40,973,829
Wisconsin .....	5,178,840	3,922,295	111,835	9,212,970	8,658,978
Minnesota .....	2,937,293	6,015,808	315,944	9,269,045	7,062,491
Iowa .....	9,119,734	7,909,695	216,716	17,246,252	17,246,106
Kansas .....	6,733,375	10,122,264	585,394	17,453,866	15,445,806
Nebraska .....	871,663	2,150,187	214,105	3,235,951	3,178,399
Missouri .....	11,968,018	8,227,042	241,475	20,436,532	19,357,032
Total of Western States...	111,464,817	101,860,470	5,485,185	219,714,907	195,506,475
Virginia .....	4,763,187	5,718,868	915,709	11,396,663	9,297,138
North Carolina .....	3,112,101	1,002,194	69,353	4,226,920	4,306,156
South Carolina .....	2,489,592	2,753,550	363,264	5,606,405	5,206,615
Georgia .....	5,143,292	2,006,510	240,651	7,377,620	6,896,269
Alabama .....	2,132,350	1,949,381	391,395	4,656,960	3,307,565
Mississippi .....	1,031,610	3,692,100	221,952	4,945,662	5,012,222
Louisiana .....	2,502,500	3,235,833	183,334	5,921,667	4,950,001
Texas .....	1,248,219	2,036,100	129,193	3,463,012	3,437,548
Kentucky .....	3,088,812	3,191,283	333,919	6,618,689	5,841,583
Tennessee .....	1,196,741	2,038,828	246,893	3,468,712	4,174,692
Total of Southern States	26,708,904	27,624,647	3,095,663	57,682,310	52,429,789
Union, Pacific, &c. ....	17,210,598	29,534,911	51,723	46,797,232	29,277,830
Grand Total .....£	275,643,529	224,142,020	17,268,451	518,641,608	433,267,161

TABLE III.

STATEMENT of the Gross and Net EARNINGS of RAILWAYS in the UNITED STATES, distinguishing the Receipts from Passengers, Goods, and other Sources, summarised from *Poor's Railroad Manual* for 1872-3.

State.	Gross Earnings.				Earnings, less Expenses, Taxes, Rent, &c.
	From Passengers.	From Freight.	All Other.	Total Amount.*	
	£	£	£	£	£
Maine.....	289,025	423,906	33,619	746,550	247,761
New Hampshire .....	210,851	415,917	22,717	649,485	165,031
Vermont .....	229,748	497,372	25,009	752,129	157,990
Massachusetts.....	1,902,091	2,054,465	221,752	4,178,307	1,259,254
Rhode Island.....	82,496	57,800	25,924	166,220	77,364
Connecticut .....	802,973	692,160	88,654	1,583,787	515,128
Total of N. England States	3,517,184	4,141,620	417,675	8,076,478	2,422,528
New York.....	2,822,718	6,456,340	497,007	9,776,065	2,643,007
New Jersey .....	1,162,043	2,390,010	260,441	3,812,494	1,804,554
Pennsylvania .....	2,450,862	9,508,723	425,528	12,385,113	4,485,755
Delaware .....	34,112	75,751	1,827	111,690	21,040
Maryland .....	235,357	1,613,865	3,506	1,852,728	744,657
Total of Middle States ...	6,705,092	20,044,689	1,188,309	27,938,090	9,699,013
Ohio .....	2,532,820	6,508,744	511,692	9,553,256	3,168,980
Michigan .....	537,159	999,573	59,568	1,596,300	545,681
Indiana .....	1,043,071	2,366,798	258,231	3,668,100	1,135,558
Illinois .....	2,039,450	5,536,771	562,272	8,138,493	3,248,917
Wisconsin .....	317,107	823,018	120,580	1,260,705	525,059
Minnesota .....	133,415	265,927	47,477	446,819	114,151
Iowa .....	375,351	761,845	68,015	1,205,211	563,242
Kansas .....	417,261	686,253	68,620	1,172,134	357,934
Nebraska .....	141,826	294,104	10,903	446,833	205,678
Missouri.....	819,741	1,360,018	107,403	2,287,162	777,082
Total of Western States...	8,357,201	19,603,050	1,814,762	29,775,013	10,642,282
Virginia.....	370,449	630,434	39,579	1,040,462	371,847
North Carolina .....	113,881	231,694	28,103	373,678	145,629
South Carolina.....	200,981	431,195	35,262	667,438	262,417
Georgia .....	366,105	1,115,909	39,192	1,521,206	425,018
Alabama .....	290,124	366,641	43,703	700,468	118,440
Mississippi.....	269,378	584,921	35,666	889,965	157,743
Louisiana .....	104,467	190,110	11,549	306,126	74,191
Texas .....	105,910	363,968	14,745	484,623	253,427
Kentucky .....	288,103	420,526	67,863	776,492	248,044
Tennessee .....	339,177	537,371	46,391	922,939	162,556
Total of Southern States	2,448,575	4,872,769	362,053	7,683,397	2,219,312
Union, Pacific, &c. ....	1,273,280	1,532,652	311,920	3,117,852	1,676,434
Grand Total .....£	22,301,332	50,194,780	4,094,719	76,590,830	26,659,569

\* As published in the *Manual*, the totals in this column exceed by about 4,000,000l. the aggregate of the preceding three columns, the total earnings having, in many cases, been furnished without any separate account of the receipts from passengers and goods. The receipts under these heads have, accordingly, been increased by a proportionate distribution of the traffic, of which no particulars are given, and the amounts being too small to involve any material error in the general summaries.



TABLE IV.

STATEMENT showing the MILEAGE, NET EARNINGS, Amount paid in INTEREST on MORTGAGES, SURPLUS after paying such INTEREST, and DIVIDENDS paid on each of the undermentioned RAILWAYS in the eight States of Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Ohio, and Illinois, compiled from the Tabular Summary and the Accounts of each Company in *Poor's Railroad Manual* for 1872-3; also showing in each case the Amount of the Borrowed Capital, Total Capital, Cost of Construction, and Excess of Total Capital over Cost.

## I.—COMPANIES PAYING 10 PER CENT. AND UPWARDS.

Mileage.	Name of Company.	Div. per cent. per Annum	Net Earnings.	Paid in Interest on Mortgages.	Surplus after paying Mortgage Interest.	Borrowed Capital.	Total Capital.	Cost of Line.	Excess of Capital over Cost of Line.
			Dols.	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.
120-0	Housatonic..... Conn.	12	92,000	26,000	66,000	457,000	2,459,000	2,206,000	253,000
78-0	Hartford and Newhaven .....	12	597,000	48,000	549,000	754,000	5,755,000	5,366,000	389,000
249-5	Boston and Albany .....	10	2,155,000	138,000	2,017,000	1,722,000	21,386,000	22,889,000	—1,503,000
68-5	Boston and Providence .....	10	430,000	—	430,000	—	3,950,000	3,814,000	106,000
54-0	Connecticut River .....	10	199,000	20,000	179,000	250,000	1,950,000	2,147,000	—197,000
14-5	Nashua and Lowell .....	10	102,000	4,000	98,000	64,000	804,000	855,000	9,000
44-5	Providence and Worcester ..	10	206,000	18,000	188,000	300,000	2,300,000	2,231,000	69,000
45-5	Worcester and Nashua.....	10	181,000	7,000	174,000	200,000	1,625,000	2,040,000	—415,000
62-0	New York and Newhaven .... Conn.	10	903,000	77,000	826,000	9,828,000	17,328,000	7,043,000	10,285,000
66-5	Norwich and Worcester .....	10	262,000	49,000	213,000	1,543,000	4,367,000	2,846,000	1,521,000
165-0	Camden and Amboy and New Jersey .....	10	4,945,000	963,000	3,982,000	18,285,000	37,276,000	37,276,000	—
74-0	Central New Jersey .....	10	3,035,000	578,000	*1,506,000	4,994,000	21,176,000	18,628,000	2,548,000
5-5	Hibernia Mine .....	10	29,000	—	29,000	—	150,000	149,000	1,000
8-5	Cornwall .....	10	42,000	—	42,000	—	300,000	395,000	—95,000
12-0	Hanover Branch .....	10	18,000	—	18,000	—	117,000	256,000	—139,000
225-5	Litchfield Valley .....	10	1,829,000	434,000	1,395,000	9,864,000	28,023,000	19,231,000	8,792,000
3-0	Little Sawmill Run .....	10	20,000	3,000	17,000	28,000	128,000	100,000	28,000
98-5	Oil Creek & Alleghany River ..	10	652,000	222,000	430,000	3,180,000	7,439,000	8,345,000	—906,000
423-9	Pennsylvania .....	10	6,896,000	1,801,000	5,095,000	30,792,000	72,131,000	34,610,000	37,521,000
279-5	Philadelphia and Reading .....	10	5,007,000	812,000	4,195,000	21,403,000	52,970,000	41,952,000	11,018,000
199-0	Cleveland and Pittsburgh .... Ohio	10	1,412,000	267,000	1,145,000	3,889,000	11,737,000	11,519,000	208,000
359-0	Chicago and Alton .....	10	2,198,000	296,000	1,902,000	4,508,000	15,863,000	16,752,000	—889,000
706-0	Chicago, Burlington, and Quincy .....	10	3,005,000	326,000	2,679,000	5,906,000	22,497,000	21,586,000	911,000
1,224-0	Chicago and North Western..	10	5,383,000	1,063,000	4,320,000	16,870,000	52,006,000	52,000,000	6,000
707-0	Illinois Central .....	10	2,733,000	573,000	2,160,000	5,764,000	31,045,000	33,610,000	—2,565,000
5,280-0			\$42,331,000	7,725,000	34,606,000	140,571,000	414,832,000	347,876,000	66,956,000
			\$7,780,680	1,416,250	6,364,430	25,771,350	76,052,720	63,777,270	12,275,450

\* Difference accounted for by payment to Lehigh and Susquehanna.



## II.—COMPANIES PAYING 7 PER CENT. AND UPWARDS.

Mileage.	Name of Company.	Div. per cent. per Annum.	Net Earnings.	Paid in Interest on Mortgages.	Surplus after paying Mortgage Interest.	Borrowed Capital.	Total Capital.	Cost of Line.	Excess of Capital over Cost of Line.
			Dols.	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.
34-0	Danbury and Norwalk..... Conn.	9	85,000	20,000	65,000	336,000	936,000	890,000	46,000
34-5	Cayuga and Susquehanna .... N. Y.	9	9,000	—	9,000	—	589,000	589,000	—
59-5	West Jersey .....	9	272,000	130,000	142,000	2,444,000	3,653,000	2,242,000	1,411,000
40-5	Boston and Lowell .....	8	252,000	29,000	223,000	1,568,000	3,801,000	2,912,000	889,000
82-5	Boston and Maine.....	8	574,000	26,000	548,000	647,000	5,568,000	5,278,000	290,000
76-5	Cape Cod .....	8½	77,000	14,000	63,000	177,000	994,000	1,515,000	—521,000
98-5	Eastern .....	8	635,000	236,000	399,000	4,819,000	9,082,000	7,146,000	1,936,000
93-0	Fitchburg .....	8	317,000	—	317,000	—	4,000,000	4,000,000	—
8-0	Hanover Branch .....	8	22,000	5,000	17,000	50,000	173,000	211,000	—38,000
36-0	New Bedford and Taunton ..	8	53,000	10,000	43,000	171,000	671,000	760,000	—89,000
20-0	Taunton Branch .....	8	43,000	—	43,000	—	450,000	501,000	—51,000
62-5	New York, Providence and Boston .....	8	392,000	67,000	325,000	1,099,000	2,986,000	2,568,000	418,000
100-0	New London Northern .....	8	139,000	48,000	91,000	762,000	1,766,000	1,530,000	236,000
74-0	New York Central..... Conn.	8	8,261,000	721,000	7,540,000	15,233,000	104,661,000	60,414,000	44,247,000
133-0	New York and Harlem..... N. Y.	8	1,029,000	373,000	656,000	5,723,000	14,223,000	14,797,000	—574,000
35-0	Oswego and Syracuse.....	8	71,000	13,000	58,000	183,000	1,324,000	1,369,000	—45,000
189-5	Rome, Waterson and Ogdensburg .....	8	394,000	130,000	264,000	1,539,000	4,538,000	4,515,000	23,000
81-0	Cumberland Valley .....	8	241,000	26,000	215,000	352,000	1,679,000	1,583,000	96,000
26-5	Philadelphia and Trenton ....	8	249,000	—	249,000	—	1,546,000	1,546,000	—
59-0	Philadelphia, Wilmington and Baltimore .....	8	1,070,000	85,000	985,000	2,536,000	13,525,000	11,001,000	2,524,000
60-0	Cincinnati, Hamilton and Dayton.....	8	589,000	145,000	444,000	2,032,000	5,532,000	5,321,000	211,000
1,074-0	Lake Shore and Michigan Southern .....	8	5,018,000	1,826,000	3,192,000	30,495,000	68,044,000	58,742,000	9,302,000
54-5	Columbus and Xenia.....	8	—	18,000	407,000	{ 302,000	2,088,000	2,088,000	—
82-5	Little Miami .....	8	518,000	93,000	—	{ 1,564,000	5,672,000	5,672,000	—
544-0	Chicago, Rock Island and Pacific .....	7½	2,623,000	659,000	1,964,000	8,717,000	25,717,000	26,763,000	—986,000
390-5	Cleveland and Columbus, Cincinnati and Indian .....	7	1,216,000	210,000	1,006,000	3,008,000	15,799,000	13,775,000	2,024,000
369-0	Pittsburg, Fort Wayne and Chicago .....	7	4,047,000	1,077,000	2,970,000	13,680,000	33,395,000	33,395,000	—
142-0	Albany and Susquehanna .... N. Y.	7	267,000	305,000	—38,000	4,482,000	7,762,000	8,531,000	—769,000
181-0	Rensselaer and Saratoga .....	7	441,000	108,000	333,000	1,925,000	7,925,000	6,991,000	934,000
118-0	Morris and Essex .....	7	669,000	813,000	—144,000	11,610,000	25,360,000	25,360,000	—52,000
18-0	Warren .....	7	231,000	88,000	143,000	1,261,000	3,061,000	3,061,000	—
53-0	Bald Eagle Valley..... Penn.	7	70,000	33,000	37,000	471,000	1,021,000	1,050,000	—29,000
98-5	Catawissa .....	7	203,000	122,000	81,000	1,740,000	4,100,000	5,126,000	—1,026,000
87-0	Erie and Pittsburgh.....	7	686,000	174,000	512,000	3,177,000	5,177,000	5,177,000	—
17-5	Lawrence.....	7	57,000	25,000	32,000	355,000	640,000	683,000	7,000
5,339-0			\$30,820,000	7,629,000	23,191,000	122,448,000	387,406,000	326,992,000	60,414,000
			\$25,650,330	1,398,650	4,251,680	22,448,800	71,024,430	59,948,530	11,075,900

## III.—COMPANIES PAYING LESS THAN 7 PER CENT.

Mileage.	Name of Company.	Div. per cent. per Annum.	Net earnings.	Paid in Interest	Surplus.	Debtenture Capital.	Total Capital.	Cost of Line.	Excess of Capital over Cost of Line.
			Dols.	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.
146-0	Old Colony and Newport .....	6	599,000	191,000	408,000	2,941,000	7,941,000	8,029,000	—88,000
13-5	Providence, Warren, & Bristol R.I.	6	29,000	5,000	24,000	113,000	552,000	706,000	—154,000
122-0	Ogdenburg & Lake Champlain N.Y.	6	348,000	88,000	260,000	1,100,000	5,177,000	5,708,000	—531,000
75-0	Utica and Black River .....	6	99,000	13,000	86,000	351,000	2,087,000	2,113,000	—26,000
12-0	Ogden Mine .....	6	29,000	—	29,000	3,000	453,000	453,000	—
16-0	Barclay Coal .....	6	—67,000	7,000	—74,000	93,000	1,093,000	Leased.	*1,093,000
24-0	Catasauqua and Foglesville...	6	56,000	—	56,000	—	426,000	742,000	—316,000
7-0	Connecting .....	6	—117,000	60,000	—177,000	996,000	2,274,000	2,278,000	—4,000
138-0	Northern Central .....	6	1,010,000	623,000	387,000	7,937,000	13,538,000	14,534,000	—996,000
28-0	Shamokin Valley & Pottsville ..	6	132,000	49,000	83,000	700,000	1,563,000	1,569,000	—6,000
20-5	Summit Branch .....	6	152,000	14,000	138,000	174,000	2,676,000	989,000	1,687,000
61-5	Naugatuck .....	5	240,000	8,000	232,000	112,000	1,984,000	2,041,000	—57,000
47-3	Elmira, Jefferson, and Cananadagua .....	5	76,000	—	76,000	—	500,000	500,000	—
13-0	Staten Island .....	5	76,000	20,000	56,000	240,000	940,000	382,000	558,000
10-0	Warwick Valley .....	5	21,000	6,000	15,000	85,000	310,000	199,000	111,000
115-0	Delaware, Lackawanna, and Western .....	5	1,550,000	212,000	1,338,000	7,064,000	25,923,000	14,315,000	11,608,000
78-0	Elmira and Williamsport ... Penn.	5	60,000	102,000	—42,000	1,620,000	2,620,000	2,620,000	—
8-5	Middesboro' and Taunton ... Mass.	4	7,000	—	7,000	—	148,000	165,000	—17,000
142-0	Dayton and Michigan .....	3½	395,000	299,000	96,000	4,245,000	6,644,000	6,512,000	132,000
4-0	Stoughton Branch .....	3	4,000	1,000	3,000	7,000	92,000	93,000	—1,000
158-0	Long Island .....	3	262,000	117,000	145,000	1,680,000	4,680,000	5,016,000	—336,000
4-0	Frankfort and Holmesbourg... N.Y.	3	1,000	1,000	—	50,000	150,000	159,000	—9,000
80-0	Vermont and Massachusetts... Penn.	2	163,000	57,000	106,000	964,000	3,824,000	3,659,000	165,000
22-5	Bellefont and Snowshoe .....	1½	16,000	6,000	10,000	99,000	699,000	442,000	257,000
1,345-8			\$5,141,000	1,879,000	3,262,000	30,574,000	86,300,000	73,224,000	13,076,000
			£942,510	344,480	598,030	5,605,230	15,821,570	13,424,400	2,397,270

\* Accounts not obtainable.



IV.—COMPANIES having a SURPLUS after paying INTEREST, but which have not declared DIVIDENDS in the last Year for which Accounts are given.

Mileage.	Name of Company.	Net Earnings.	Paid in Interest on Mortgages.	Surplus after Paying Mortgage Interest.	Borrowed Capital.	Total Capital.	Cost of Line.	Excess of Capital over Cost of Line.
		Dols.	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.
11-5	South Shore.....	16,000	9,000	7,000	159,000	418,000	501,000	—83,000
123-0	Hartford, Providence, &c.....	191,000	144,000	47,000	2,053,000	4,293,000	4,705,000	—412,000
84-0	Newhaven and Northampton ..	151,000	104,000	47,000	1,717,000	3,817,000	3,565,000	252,000
50-0	Shore Line.....	131,000	14,000	117,000	200,000	1,200,000	1,200,000	—
19-0	Avon, Genesee, &c.....	5,000	2,000	3,000	20,000	239,000	243,000	—4,000
4-0	Clove Branch .....	4,000	—	4,000	—	150,000	150,000	—
17-0	Cooper's Town and Susquehanna ..	22,000	9,000	13,000	124,000	432,000	456,000	—24,000
12-0	Flushing and North Side .....	108,000	72,000	36,000	1,025,000	1,331,000	990,000	341,000
10-0	Fonda Johnstown, &c. ....	31,000	23,000	8,000	327,000	627,000	464,000	163,000
11-5	Goshen and Deckertown .....	20,000	17,000	3,000	246,000	341,000	291,000	50,000
14-0	Greenwich and Johnsonville ...	15,000	9,000	6,000	130,000	260,000	274,000	—14,000
5-0	Middleburg and Schoharie ....	4,000	1,000	3,000	16,000	102,000	102,000	—
13-0	Middletown, Unionville, &c.....	19,000	19,000	—	290,000	412,000	350,000	62,000
10-0	Montgomery and Erie .....	20,000	13,000	7,000	177,000	327,000	289,000	38,000
43-0	Montreal and Plattsburg .....	10,000	—	10,000	—	1,000,000	—	1,000,000
5-0	Skaneateles .....	8,000	2,000	6,000	35,000	113,000	140,000	—27,000
81-0	Syracuse, Binghamton, &c.....	150,000	125,000	25,000	1,805,000	3,475,000	3,867,000	—392,000
40-0	Troy and Boston .....	227,000	168,000	59,000	1,968,000	3,567,000	2,312,000	1,255,000
89-0	Utica, Chenango, and Susquehanna Valley .....	65,000	—	65,000	—	2,559,000	2,819,000	—260,000
67-0	Belvidere Delaware.....	229,000	140,000	89,000	3,457,000	4,453,000	3,784,000	669,000
60-0	Camden and Atlantic .....	126,000	79,000	47,000	1,166,000	2,298,000	2,127,000	171,000
6-5	Millstone and New Brunns.....	4,000	1,000	3,000	18,000	113,000	113,000	—
21-0	Northern New Jersey .....	55,000	28,000	27,000	400,000	1,400,000	527,000	873,000
6-5	Perth, Amboy, and Woodbridge ..	10,000	10,000	—	157,000	215,000	215,000	—
31-0	Sussex.....	62,000	15,000	47,000	203,000	1,236,000	1,436,000	—200,000
132-0	Alleghany Valley .....	748,000	290,000	458,000	4,462,000	6,720,000	9,747,000	—3,027,000
59-0	Huntingdon and Broad Top Mount .....	88,000	77,000	11,000	2,008,000	2,879,000	2,792,000	87,000
80-0	Lackawanna and Bloomsburg ...	380,000	162,000	218,000	2,452,000	3,787,000	3,960,000	—173,000





## P O S T S C R I P T.



THE official Board of Trade Railway Statistics for the United Kingdom for 1871 have been issued just as the foregoing pages were being printed. The comparison made with American railways, based on the returns for 1870, remain substantially correct, but it will be useful to note the exact figures for 1871, which are: Capital received, 553,000,000*l.*; miles constructed, 15,376; gross receipts, 48,893,000*l.*; receipts from passengers, 20,623,000*l.*; receipts from goods, 26,485,000*l.*; receipts from other sources, 1,785,000*l.*; total receipts per train mile, 5*s.* 3*d.*; total working expenditure, 23,153,000*l.*; total net receipts, 25,740,000*l.*; and proportion per cent. of net receipts on capital, 4·65 per cent.

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BY THE SAME AUTHOR.

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OF

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WITH

CALCULATION TABLES ADAPTED TO EVERY INVESTMENT.

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The Tables at the end of the Book fall under two heads, those which show at a glance what is required, and those which imply some knowledge of Decimals.

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In the Second Edition, many new headings have been added in consequence of the suggestions kindly made. Thus, it is hoped, the Record may have attained a nearer approach to completeness.

The Tables have also been considerably enlarged.

## TABLE OF CONTENTS.

## Preface.

Part I. Stock and Share Investments and Sales—Section I., Stocks or Shares Bought or Acquired; Section II., Stocks or Shares Sold or Disposed of; Section III., Stock and Share General Account.

Part II. Solicitor's &c., Memorandum Book—Section IV., Freehold and Copyhold property; Section V., Leaseholds Let; Section VI., Leaseholds Held; Section VII., Mortgages Held; Section VIII., Mortgages Effected; Section IX., Insurances; Section X., Bills of Exchange and Promissory Notes; Section XI., Loans Lent; Section XII., Loans Borrowed.

Part III. Tables—Section XIII., Share Dividend Table, showing the Per-Centage of Declared Dividends on Shares from 10s. to £300; Section XIV., Yield Table, showing the Yield or Return on Stocks with a fixed Interest from  $\frac{1}{16}$ th to 10 per cent. at Purchase Prices from £1 to £400 per cent.; Section XV., Table of Annual Incomes, showing what Sums at Par is required under the respective rates of Interest to produce any Income from 1s. to £400; Section XVI., One Hundred Pounds Income Table, showing what sums are required at rates of Interest from 1 to  $10\frac{1}{2}$  per cent., and at Purchase Prices from £1 to £99, in order to produce £100 annually; Section XVII., Foreign Moneys, calculated at Exchanges named—Indian, Chinese, American, French, Italian, Prussian, Portuguese, Spanish, Russian, Dutch, and Turkish, giving the values of the principle moneys in Decimals of a £ from 1 to 99; Section XVIII., Table of Reciprocals—(a.) Reciprocals of the first 1000 Integers, (b.) Reciprocals of the multiple of 365; Section XIX., Decimal Pence from 1 to 240, Multiplication Table, One Penny and One Shilling per cent. Yield Tables; Section XX., Contango and Commission Tables; Appendix—Memoranda.

Under the heading of Stocks and Shares, the investor is enabled to enter the Date of Purchase—Description of Stock or Shares: Security, Rate of Interest, Date of Issue—Amount of Security purchased, and Cost: Amount of Stock, or No. or Shares; At price per Cent. or per Share, Commission Stamp and Fee, Total Amount Paid—Numbers of Bonds or Shares, and when Registered—where Deposited—Title and Address *in Full* of Purchaser—Title and Address *in Full* of Seller—Broker through whom Purchased—Miscellaneous Information: Dividends, When Paid, Where Paid; Drawings or Redemption, When Drawn or Redeemable, Value of Drawing—Remarks. Also to whom sold, &c., with ten pages of general account.

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Under "Loans Lent," columns are given for Date—Amount—Borrower: Name, Address—Security (if any)—When Repayable—Rate of Interest—When Payable—When Paid—General Remarks.

Under "Loans Borrowed," columns are given for Date—Amount—Lender: Name, Address—Security (if any)—When Repayable—Rate of Interest—When Payable—When Paid—General Remarks.

The Calculation Tables are exceptionally full, being adapted both to the higher mathematician and to the most popular uses. Then the mathematician will find the reciprocals of the natural numbers from 1 to 999; the reciprocals of 365 from 1 to 100, and the decimal to six places of decimals of every penny in the pound.

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